



Photograph by W. & D. Downey

GEORGE V, KING-EMPEROR, AND MARY, QUEEN-EMPRESS.

THE OXFORD INDIA READER

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IMPERIAL GAZETTEER OF INDIA

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(THE INDIAN EMPIRE)

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PREFACE

THESE lessons consist of extracts from the four volumes of *The Indian Empire* which form the introduction to the new edition (1907-8) of 'The Imperial Gazetteer of India'. They do not provide a summary or abridgement of those volumes; compression has been effected by the selection of significant and representative passages. The aim has been to supply a reading-book which may supplement such manuals as Hunter's *Brief History of the Indian Peoples* and Vincent Smith's *Oxford Student's History of India*, or be used independently in High Schools, Chiefs' Colleges, and University Classes. The wealth of solid fact and sound conclusion thus made accessible to the young student should help him to take an intelligent interest in the history of India, to form correct opinions on current questions of importance, and to realize the nature and value of historical inquiry.

The contributors to *The Indian Empire* are not responsible for the selections made from their articles, but lessons 13 and 17 embody some revision kindly made by Mr. Vincent Smith, late I.C.S., author of *The Early History of India*. In the Notes reference has occasionally been made to recent official statistics and reports.

NOTE

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ADDENDUM

IN a great Coronation Darbār held at Delhi on December 12, 1911, the King-Emperor announced the following changes :—

The transfer of the seat of the Government of India from Calcutta to Delhi.

Bengal, re-constituted on a new basis, to have the status of a Presidency.

The establishment of a new Lieutenant-Governorship for the provinces of Bihār, Chotā, Nāgpur, and Orissa.

The creation of a Chief Commissionership for Assam.

The consequent disappearance of Eastern Bengal and Assam as a separate Lieutenant-Governorship. (See p. 241.)

PART I. DESCRIPTIVE

LESSON 1. PHYSICAL ASPECTS

The name of the country. For many ages India was not known, even to its early inhabitants, by any single epithet which would embrace all her tribes and races. The earliest recognizable term for India, Bhāratvarsha (the land of the Bhāratas—a noble warrior tribe which came from the north), applied only to the basins of the Indus and the Ganges, and only to a part even of them. Central Aryan peoples, pouring through the highland passes into India, impelled southward by the crowd of competing humanity in High Asia, found their progress barred by the Indus, which appeared to them to be a vast expanse of waters, even as the sea; and they called it by the ocean name of Sindhus, a name that still survives in the region bordering its lower reaches. The Persians called it Hindu in the Zend language; the Greeks reduced the name to Indos, but they knew the native name, Sindhus. Eastern nations equally with the Western knew India as the land of the Indus. The famous Chinese pilgrim, Hiuen Tsiang (629–45 A D), decides that the rightful appellation is In-tu. Modern Persian, which makes it 'Hind', has been adopted in the title of the Emperor, Kaiser-i-Hind, thus giving it a far wider application than its original significance, which was limited to a part of the Punjab and the basin of the Ganges.

Extension of the term 'India'. India can no longer be considered apart from that wide hinterland of uplands and mountains which flank the low depression of the Indo-Gangetic plain. Economically, politically, and physically the India of to-day must be held to include those outlying territories over which Indian administration extends its control, even to the eastern and southern limits of Persia, Russia, Tibet, and China. By India we now imply not merely the wide continent which

stretches southward from the Himālayas to Cape Comorin, but also the vast entourage of mountainous plateaux and lofty ranges which remain an everlasting wall between it and the rest of Asia, and across which through all historic ages its land approaches have been found.

Two great divisions. We have, then, two great divisions of India to deal with. First, the extra-peninsular area of highland and lowland—the recently elevated plains and peaks of Baluchistān, Afghanistān, Kashmīr, the Himālayas, and Burma; and then the true Peninsula—the ancient India of the dim geological past—the India of old-world fable and of English history, which includes the great depression of the Indo-Gangetic plains.

The gateways. The land approaches and gateways to India have ever been on the west and north-west, either through the sterile rock ways of Southern Baluchistān to the Indus delta, or across the plains of Kandahār to the defiles of lower Sind, or by Ghazni to the Indus valley, or by Kābul to the Punjab. These have always been the main channels for the flow of immigration from Central Asian steppes and valleys into the golden land of promise, as well as the narrow pathways for the commerce of centuries long past. If, in a future of railway developments and a rush of motor traffic, once again the land approaches to India rival those of the sea, then will some of these again become the highways of the Eastern world, and we shall take our tickets in London for Herāt, and change at Kandahār for Kābul or Karāchi.

There are other tracks and byways of the mountains through which from time to time men have made their perilous way to the plains of India. Routes exist by Leh and Kashmīr, or by the gorges of the Sutlej from Tibet, or by the passes beyond Gilgit from the Pāmirs, or by those of Sikkim from Lhāsa; but these are not the highways of a multitude. No rush of invasion from the west, or of Central Asian migration from the north, ever swept through them southwards, and none ever will. The stupendous dispositions of nature still overmatch the beautiful but delicate provisions of science, and we must perforce accept such roads as nature points out, and treat her indications with respect.

Physical aspects of the Himālayas. The physical aspects



Phot. Spooner

THE HIMALAYAS.

of the Himālayas are only partially known to us. The districts of Kumaun and Garhwāl, adjoining Kashmīr in the North-western Himālayas, and the State of Sikkim in the south-east, are the best-known regions of this stupendous mountain system. It cannot be said that we are acquainted with more than the main features of Nepāl, or that we know much of the physiography of the eastern hills which cradle the affluents of the Brahmaputra. With a climate and vegetation ranging between arctic and tropical, the conditions of life within the valleys overshadowed by the gigantic peaks of the Himālayas are infinitely varied. Even the accidents of position in relation to the sun's rays are recognized by the natives of the hills as requiring special terms to denote them, so obvious is their influence in moulding human life and character. Within the limits of a single valley (where there may, however, be space enough to accommodate the whole European Alpine system) there will often be found varieties of human type which might almost indicate divergency of origin.

Himālayan passes. The main passes across the Himālayas may be divided into three groups. Firstly, the Shipki group, which marks the line of connexion with Tibet afforded by the passage of the Sutlej river from the highlands beyond the northern flank of the Himālayas to the plains of India. This group includes a route which has for many years been regarded as the commercial high road between India and Tibet. Probably it originally determined the position of Simla, and with the expansion of Simla developed into more than a mere mountain track. It is for a considerable part of its length a well-engineered road, but as a trade route it has never proved a success. Secondly, there is the Almorā group, which determined the position of Naini Tāl and Almorā, and lies to the north of them. Across these tracks a certain amount of traffic is always maintained, chiefly by the agency of sheep as transport animals. A little to the east of the Almorā group is the opening through the hills effected by the chief affluent of the Gogra river, which rises not far from the birthplace of the Indus, the Brahmaputra, and the Sutlej—that remarkable hydrographical focus contiguous to the Mānasarowar Lakes. The third group crosses the northern barriers of the State of Sikkim from Darjeeling to Southern Tibet and Lhāsa. Thus

all the main passes of the Himālayas strike into the elevated table-lands of Tibet, even including those which belong more correctly to the trans-Himālayan area centring on Leh, the Ladākh capital in the far north-west, as well as the Bhutān passes of the far east. None of them is passable except for trade purposes; none of them at present contributes anything material to the commercial prosperity of India.

The Indo-Gangetic depression. The Peninsula of India is parted from the northern area of upheaval, of which the Himālayas are the southern revetment, by a broad interval of low flat country known as the Indo-Gangetic depression. In some respects this is the most important physical feature of India. Within the basin of the Ganges have ever been founded the chief kingdoms of the plains; the most ancient cities; the earliest centres of civilization, of industry, and of wealth. The mighty river has silently worked through the ages in an unceasing process of regeneration of the soil, spreading life and strength abroad among the millions who venerate its sanctifying agency and purify themselves from sin in the turbid flood which laps the temple steps of Hardwār and Benares. From the delta of the Ganges to the delta of the Indus this strange wide region of depression extends. Within it is not to be found a boulder (not even a pebble) to break the uniform regularity of its alluvial surface. It is these heat-stricken plains, rather than the mountains of the north or the plateaux of the south, which have given India its colouring in history, and from which was derived the popular conception of the India of last century. Since the geological era in which occurred the parting of the waters, when the Indus affluents first started westwards and those of the Ganges turned their currents to the east, the physical character of the two basins has rapidly diverged.

The valley of the Ganges. Great changes have taken place throughout the valley of the Ganges, even within the historic period. The river has pursued its uninterrupted course of land-building, shifting its channels from time to time; withdrawing its waters from the walls of great cities which once adorned its banks, to give life and energy in new directions. Upon its banks in the present day are such centres of wealth and commerce as Calcutta, Patna, Benares, Allahābād, and Cawnpore, with Agra and Delhi on its affluent the Jumna.

There is not a river in the world which has influenced humanity or contributed to the growth of material civilization, or of social ethics, to such an extent as the Ganges. The wealth of India has been concentrated on its valley, and beneath the shade of trees whose roots have been nourished by its waters the profoundest doctrines of moral philosophy have been conceived, to be promulgated afar for the guidance of the world.

The Indus plain. From the very commencement of the plains spreading southward the Punjab presents an aspect of flat, treeless landscape, a broad grey sea expanding to a level horizon. There was a time when forests grew on the Indus—forests with timber sufficient to enable Alexander the Great to construct the first Indus flotilla; and about the valley of Peshāwar there were wide spaces of water-logged and swampy plain, amid the thick reed growths of which the rhinoceros and elephant had their home. Nor was this so very long ago; the skull of the rhinoceros has been found quite lately on the present ground surface. The deadly miasma of the swampy Peshāwar valley was as destructive 300 years B.C. as in the year of grace 1850. Happily within the last half-century science has shown the way to improved sanitation, and the climatic reputation of the Peshāwar valley has greatly improved. But the forests of the Punjab have long ago disappeared, and it is probable that with their disappearance the meteorological conditions of the Indus valley have greatly changed.

Nowadays the recorded rainfall is scanty (4 to 8 inches per annum, about the lower Indus), and the heat of the hot-weather months (April–July) is occasionally terrific. Monsoon-laden currents sweep up over Sind month after month, but no vapour is condensed in the hot, dry air. No coast range about Karāchi faces the sea to send those currents circling aloft into the cooler strata of higher altitudes, where rain is made and the heavy atmosphere is deprived of its moisture. No part of the Indus valley is subject to a regular and systematic rainfall in the monsoon season, although the fall gradually increases from Sind upwards to Lahore. Neither can the frontier hills west of the Indus be said to lie under the influence of the south-west monsoon, in spite of their altitude. Thus the climate of the Indus valley is hot and dry, and the vegetation

which feeds on the reeking atmosphere of Bengal is entirely wanting. Tamarisk and other scrub fringes the river banks, and occasionally stretches outwards into something approaching forest dimensions. Irrigation has greatly developed lately; and there are green spots about the Indus river and the newly-spread network of the Punjab canals which are once again slowly but surely altering the character of the landscape, if not of the climate.

Southern India. South of the Tāpti river commences the Deccan, that striking physical feature which shapes the whole continent of India—the great three-cornered upheaval which, abutting on the line of the Western Ghāts, slopes with comparatively regular and easy grades to the step formed by the Eastern Ghāts overlooking the Bay of Bengal. Fringing this central sloping plateau on either side is a narrow strip of coast land, which comprises the lowlands of Bombay on the west and of Madras on the east. These lowlands form the India known to mediaeval tradition. It was on them that the foreigner, pushing forward his commercial interests, first set his foot; and the India known to the West for many centuries was but the narrow margin of fertile territory which lay below the feet of the mountains known as the Eastern and Western Ghāts.

Physical aspects of the Deccan. The two great river basins of the Godāvari and the Kistna nearly divide the Deccan highlands between them. The Cauvery is a third river of the Deccan which has its sources on the Western Ghāts to the north-west of Mysore, close to those of the Tungabhadra, the chief southern affluent of the Kistna. The basin of the Penner also (a comparatively small river which reaches the Bay of Bengal near Nellore) includes a part of the Deccan highlands. The small streams and rivulets which, emerging from the embrace of the eastern slopes of the Ghāts, unite to form these rivers as they gradually pursue an uneventful course through the shelving flats of the Deccan, pass through districts which are almost monotonously similar in their physical characteristics. The magnificent peaks and precipices and broken outlines of the western mountains merge gently into wide rust-coloured plains, streaked and dotted with outlying hills of bold configuration, which still preserve a physical likeness and relation to each other. The

intervening spaces are bare in patches, or covered with an intermittent growth of somewhat stunted forest, save where the black soil (locally known as 'cotton' soil) prevails near the rivers, until gradually the river-flow becomes more abundant, and irrigation adds fertility and agricultural freshness to the landscape. There is no soil in India more productive than the black cotton soil of its central highlands. In the gneissic regions of the Deccan the plains are frequently starred and dotted by granite tors and bosses, sometimes of immense size, which introduce a local character to the aspect of the country that is entirely typical of India. The rock of Trichinopoly, the great carved bull of the Chāmundi hill in Mysore, the Madan Mahal in Jubbulpore, where a palace surmounts a rounded mass of granite, are all famous and are all typical.

LESSON 2. GEOLOGY

Peninsular and extra-Peninsular India. To those who support, as well as to those who deny, the doctrine of the permanence of oceanic basins and continental plateaux, India provides striking illustrations of these opposed opinions, a circumstance which suggests that the real truth lies somewhere between the extreme positions taken up by two classes of equally sincere naturalists. Those who think that the main orographical features originally developed on the solidified crust have never been seriously modified, recognize in the main Peninsula an example of solid land which has neither been folded nor disturbed since the earliest geological times. Those who hesitate to recognize any limits to the mobility of the earth's crust quote the Himalayas as an example of an area in which marine deposits containing Nummulites, and therefore no older than the London Clay, have been raised to an elevation of 20,000 feet within the Tertiary period.

Within the limits of the Indian Empire we have, therefore, two utterly dissimilar areas, unlike in geological history and equally unlike in the physical features which are the direct outcome of the geological past. In the Peninsula we have one of the few masses of land which have withstood all tendencies to earth-folding for as long as the palaeontological

record stretches back. In the Himālayan region, on the other hand, the folding of the crust has produced, during the latest geological epoch, the grandest of our mountain ranges.

The stable Peninsula. Except in marginal strips which show temporary and local trespasses of the sea on the coast, not a single marine fossil is found throughout the whole extent of peninsular India. The orographical features of this area are the outcome of the erosion of an old land surface, where the shallow open valleys, with rivers near their base-level of erosion, and the gently undulating plains are due to the toning down of the rocks by long exposure to the weather.

The folded extra-Peninsular area. A very different state of things is disclosed in the land lying to the west, north, and east of the great Indo-Gangetic alluvial belt; in Sind, Baluchistān, the Himālayan belt, Assam, and Burma we have abundant evidence of repeated immersions beneath the ocean. In this arc the directions of the mountain chains are determined by comparatively young rock-folds, while the region having been but lately elevated, its rivers are swift and torrential, cutting down their beds so rapidly that the valley sides are steep, with loosened material, always ready to slide off in destructive landslips.

Existence of an old Indo-African continent. That India and the southern and central parts of Africa were once united into one great stretch of nearly continuous dry land is proved by overwhelming evidence. So far as the evidence from fossils goes, it points either to a complete land connexion, or to an approximation sufficiently close to permit free migration of land animals and plants. There is still another piece of evidence, all the more striking because it belongs to an entirely different field of observation. It is found that between the Seychelles, which are connected by comparatively shallow waters with Madagascar and Africa, and the Maldives, which are on the Indian continental platform, there exists a submarine bank, preventing the ice-cold Antarctic currents that characterize the greater depths in the South Indian Ocean from extending into the Arabian Sea, which has thus a higher temperature than the water at corresponding depths to the south of this bank. We have here the remains of the old continent, depressed sufficiently to cut off India from South

Africa, but still enduring as a bank between the great depressions to the north-west and the south-east. Finally, the modern distribution of animals is explained by this occurrence of an Indo-African continent, and in turn furnishes evidence in favour of the conclusion already based on palaeontological data. Within the part of India south of the Gangetic plain are numbers of genera and species not found in other parts of the Indo-Malayan region, which have near relatives in Madagascar and South Central Africa. The likeness can only be accounted for by this supposition of an ancient land communication, while the amount of divergence is no more than would be expected from independent evolution, since the separation occurred in early Tertiary times.

Recent volcanic action. Since the times when the Himālayas finally rose as a great barrier between India and the rest of Asia, considerable changes have taken place in the physical geology of the country. In the two great areas of folding which meet the eastern and western extremities of the Himālayan range volcanic action has persisted down to recent times. On the east we have Barren Island, Narcondam, and Pūppa, representing the northern extension of the line which in the region of Sumatra, Java, and the Sunda Islands has been so remarkable for its volcanic activity, while on the west, in the Irānian region of folding, we have volcanoes like Koh-i-Sultān, Koh-i-Taftān, and Basman Koh.

Earthquakes. Earthquakes tend generally to be more frequent in the regions of extra-peninsular India, where the rocks have been recently folded, than in the more stable Peninsula; and the areas which have recently come into prominence in this connexion are the Province of Assam and the Kāngra valley in the Punjab Himālayas. In the former tract the most violent earthquake on record occurred on June 12, 1897. The known extent of the area over which the shock was distinctly felt was about 1,200,000 square miles. The Kāngra earthquake occurred on April 4, 1905, at an early hour in the morning, in consequence of which it resulted in a great loss of life, estimated at about 20,000. The shock was sensibly felt over an area nearly as large as that disturbed in 1897, being recognized as an earthquake as far west as Quetta, as far south as Surat in Bombay and False Point in Bengal, and as far east as Lakhimpur in Assam.

Recent rises and subsidences of the land. Within India proper there have been local changes in the relative level of land and sea within recent geological times, in some cases connected with earthquakes, as in the case of the earthquake of Cutch in 1819 when a part of the Rann was submerged, and in the Assam hills, among which alterations of level and horizontal distance were detected by measurements after the great earthquake of 1897. The Andamans and Nicobars have been isolated from the Arakan coast by submergence at a probably recent date.

On the east side of Bombay Island trees have been found embedded in mud about 12 feet below low-water mark, while a similarly submerged forest has been described on the Tinnevely coast. On the other hand, there is evidence to show that a part of the coast of Tinnevely has risen and driven back the sea in the neighbourhood of Kāyal.

The Indo-Gangetic alluvium. The most important and extensive among the deposits of very young age in India are the great alluvial accumulations on the confluent plains of the Indus, Ganges, and Brahmaputra. Throughout the great Indo-Gangetic alluvial area a sandy clay forms the prevailing material, the older alluvium being distinguished by the nodular segregations of carbonate of lime, called *kankar*, used largely as a source of lime and as road metal. These alluvial deposits have been penetrated by borings in two places below the sea level. The boring at Calcutta reached a depth of 481 feet without signs of either a rocky bottom or marine beds, while fragments of fresh-water shells were found as low as 380 feet below the surface, and coarse pebble beds were met throughout the lowest section of the bore-hole, showing that the present site of Calcutta was near the margin of the river valley which has undergone depression accompanying the accumulation of alluvial material. The boring at Lucknow extended to nearly 1,000 feet below sea-level, with no further sign of an approach to the bottom than that shown by the appearance of coarse sand near the end of the hole.

Upland river deposits. Besides the deposits formed by the great rivers on the plains of India, Assam, and Burma, there are interesting river deposits at higher levels, like those of the upper Sutlej valley in Hundes, which have yielded numerous vertebrate fossil remains; the *karewa* deposits of

the upper Jhelum in Kashmīr; the so-called *taur* lands of Nepāl, in which beds of peat and phosphatic clay occur; and the similar deposits in Mauipur and farther east in the Chindwin valley of Burma.

Wind-blown deposits. The sand dunes of the coast of Orissa, the *teris* of Tinnevely and Travancore on the coast, the accumulations of blown sand on the banks of the Kistna, Godāvari, and Cauvery, the great gravel slopes which form the *dāman* fringes of the Baluchistān hills, the finer loess of the plains, the extensive accumulations of the Potwar, the great desert sand deposit of Rājputāna and Sind, and the peculiar black soil or *regar* so widely distributed over the Deccan must be passed by with a mere mention.

LESSON 3. METEOROLOGY

Singular interest of Indian meteorology—(1) *Its variety and contrasts.* India probably presents a greater variety of meteorological conditions and features than any area of similar size in the world. The normal annual rainfall varies from 460 inches at Cherrapunji in the Assam hills, and from between 300 and 400 inches (probably) at suitably exposed positions on the crests of the Western Ghāts and the Arakan and Tenasserim hills, to less than three inches in Upper Sind. The largest rainfall actually measured in one year was 905 inches, at Cherrapunji in 1861, while at stations in Upper Sind it has been *nil*. A rainfall exceeding 25 inches within twenty-four hours is of occasional occurrence, and falls exceeding 15 inches are comparatively frequent. At one period of the year parts of India are deluged with rain; at another persistent dry weather with clear skies prevails for weeks or months. During the rains the air is almost supersaturated with moisture in some of the coast districts and in the hills, while in the hottest weather it is occasionally so dry in the interior that the methods employed for calculating humidity in Europe have given negative and hence impossible results. The coasts are occasionally visited by cyclones fiercer and more concentrated than have probably ever occurred in Europe.

These bring up storm-waves that sweep over the low coast lands of Lower Bengal or the deltas of the Mahānadī, Godāvāri, and Kistna, destroying the crops, and drowning the inhabitants by tens of thousands. In one season of the year India is the scene of the most wonderful and rapid growth of vegetation; in another period the same tract becomes a dreary brown sunburnt waste, with dust-laden skies and a heated atmosphere that is almost unendurable even by the natives of the country. The transition from the latter to the former phase over the greater part of the interior often occurs in a few days. In one year the rains may be so distributed as to cause a severe and extensive famine over several Provinces, necessitating for months afterwards the continuous relief of millions of the population; in another the meteorological conditions may be so favourable that the crops far more than suffice for the normal food demand.

(2) *Tropical and temperate conditions.* India again presents a noteworthy combination of tropical and temperate region conditions. Tropical heat, heavy and frequent rain, and fierce cyclones are prevalent at one period of the year; while moderate temperature and rain, with shallow extensive storms—conditions resembling those of South-eastern Europe—obtain at another.

(3) *Pronounced monsoon conditions.* In the third place India is *par excellence* the area in which the contrast of what are termed monsoon phases or conditions is exhibited most strongly over a large area. These conditions are the prevalence of dry land winds, with little cloud and rain, during one half of the year, and of winds of oceanic origin, with high humidity, much cloud and frequent rain, during the other half.

India not an isolated meteorological area. For many years the Indian region, including India proper, Burma, the Arabian Sea, and the Bay of Bengal, was considered as an independent meteorological area, in which the weather was supposed to be determined chiefly, if not solely, by the conditions within that area. It was assumed that India was protected on the north by the lofty barrier of the Himalayas, and on the west by the moderately high range of the Sulaimāns, from the cold winds coming from northern regions, and that it was only exposed to the influence of equatorial

sea currents. The presence of this northern mountain barrier does undoubtedly exercise a very considerable influence on the meteorology of India, and more especially of the Indo-Gangetic plain; for a comparison of the temperature data of Northern India with those of the south and centre of the limited States in the same latitudes indicates that the intervention of the Himalayas increases the temperature of the Indo-Gangetic plain from 3° to 5° above what it would have been if a low-level plain had extended northwards to the Arctic regions. Nevertheless, meteorological conditions in India generally are very largely determined by outside influences. The cold weather rainfall in India is largely dependent upon storms which originate in the higher atmosphere to the north-west of India, and the distribution of the monsoon rains is in part dependent upon conditions in the distant Indian Ocean, and in part upon conditions in East Africa, the Persian area (probably), and perhaps to a slight extent Central Asia.

The monsoons. The primary fact in the meteorology of India is the alternation of seasons known as the south-west and north-east monsoons. The north-east monsoon is a season of winds of continental origin, and thus of great dryness except where they have passed over some extent of sea, and hence in India of clear or lightly-clouded skies and of light occasional rain, due either to feeble depressions or to local disturbances. The south-west monsoon, on the other hand, is a season of winds of oceanic origin, of high humidity, and of frequent and heavy rain over nearly the whole area. The average annual rainfall of India, as determined from the returns of about 2,000 stations, is 45 inches, of which nearly 90 per cent. falls during the south-west monsoon. From this point of view the terms 'dry' and 'wet' monsoon seem to be more appropriate, as suggesting the most prominent and important feature of the seasons in the land area of India.

The dry monsoon. The dry monsoon, which lasts from about the middle of December to the end of May, may be divided into two periods, one of comparatively low, and the other of increasing and high, temperature. The former, the cold weather of Northern India, includes the months of January and February, and the latter extends from March to May.

The wet monsoon. The wet monsoon may also be sub-

divided into two periods. The first, from June to September, is the monsoon proper, when general and heavy rain falls occasionally or frequently in nearly all parts of India. The second is the retreating monsoon period, when the area of rainfall contracts southwards, and the intensity and volume of the fall diminish, until the humid currents pass out of the Indian land and sea areas and withdraw to the equatorial belt; this period extends from October to December.

The cold-weather period. Clear skies, fine weather, low humidity, large diurnal range of temperature, and light land winds are the characteristic features of the weather in India during the cold-weather period. These conditions are as a rule initiated in the Punjab in the beginning of October, extend slowly eastwards and southwards, and finally prevail over the whole Indian land and sea area to the north of lat. 8° N. before the end of December. The months of November and December are, on the whole, the pleasantest of the year in Northern India.

During this season the rainfall is very small in amount over Lower Burma, and practically *nil* over the greater part of the Peninsula. The rainfall in Northern India is greatest in the submontane districts, and decreases in amount with increase of distance from the hills. The chief feature of the precipitation is the heavy snowfall in the Western Himālayas and the higher mountain ranges of Afghanistan and Baluchistān. It increases rapidly with elevation, and probably exceeds on the average 30 feet at 15,000 feet of altitude, and varies between that amount and at least 60 to 100 feet over the higher ranges.

Fine weather prevails generally in Southern India at this period; but occasional showers, frequently accompanying thunderstorms, are received in the coast districts, and on the Palni, Nilgiri, and Anaimalai hills, usually immediately after the breaking up or disappearance of the more vigorous cyclonic storms of the period in Northern India, when strong north-east winds flow down the Bay and are continued as easterly winds across the Coromandel coast. This is, it may be pointed out, one of the many examples of a marked contrast of conditions between northern and tropical India. Higher temperature or cloudy weather in one area often accompanies lower temperature or weather finer than usual in the other.

The hot-weather period. The second half of the dry season includes the months of March, April, and May. The conditions existing during the first half of the dry monsoon season begin to be modified over the whole land and sea area of India in the latter half of March, owing to rapid increase of temperature. In April and May very large and important changes in the pressure, temperature, and humidity conditions are initiated in the interior of India. Temperature increases rapidly and steadily over the heated land area, owing to the transfer of air to neighbouring cooler regions, more especially the sea areas of the south. India thus becomes a low-pressure area relative to the adjacent seas. The storms of this hot-weather period are local in character. They include the dust-storms of the dry, heated interior (the Punjab, Sind, Rājputāna, and the Gangetic plain), and thunderstorms in the regions in which there is more or less interaction between the damp sea winds and the dry winds from the interior, viz. Assam, Bengal, Burma, the west coast districts, and the Deccan. Hailstorms are more common in Assam than in any other part of India. They also occur frequently in Central India, and occasionally in Bombay, Rājputāna, the United Provinces, Bengal, the Central Provinces, and Sind. They are of very occasional occurrence in Upper Burma, Hyderābād (Deccan), and Kāthiāwār, and rarely, if ever, occur in Mysore, South Madras, Malabar, the Konkan, and Lower Burma. The interaction of the dry and damp winds is, in Bengal and Assam, supplemented by the action of the hills in giving forced ascent, and these thunderstorms, or 'nor'-westers' as they are locally called, are of frequent occurrence, and occasionally of great violence and intensity. Sometimes they develop into tornadoes, the most intense form of small revolving whirls. The rainfall due to these hot-weather storms is very important to North-eastern India, especially in Assam, where it is of great service for the tea crop.

The wet season or south-west monsoon. We have next to deal with the south-west monsoon. The first portion of the wet season, from June to September, witnesses the extension of the south-west monsoon currents over the whole of India and their persistence during these months as rain-giving currents. This is the season of the south-west monsoon proper. It is the most important season of the year, as it is upon the

amount and distribution of the rainfall of this period that the prosperity of at least five-sixths of India mainly depends.

Date of establishment of wet monsoon. The normal dates on which the monsoon currents advance into the larger Provinces of India are given below :—

Area.	Normal Date of the Commencement of the South-west Monsoon Rainfall.
Malabar	June 3
Bombay Coast	" 5
Deccan	" 7
Central Provinces	" 10
Central India	" 15
Rājputāna	" 15
Bengal	" 15
Bihār	" 15
United Provinces, East	" 20
United Provinces, West	" 25
Eastern Punjab	" 30

The dates do not, as a rule, vary much in the coast districts, but range over a considerable period in North-western India. The monsoon is usually established over the whole Indian area by the end of June. July and August are the months of greatest extension of the currents to the northern limits of the Punjab, and of heaviest and most general rain. The strength of the currents, and the accompanying rainfall, begin to diminish in the first or second week of September, and decrease rapidly during the latter half of the month.

The retreating south-west monsoon. The second half of the wet season forms a transition period leading up to the establishment of the conditions of the dry season. During this period the area of rainfall contracts and extends southwards, and diminishes in intensity, but is determined by the same winds or air currents, and by the same general conditions, as in the preceding period, June to September. The transition from the wet to the dry season commences in the latter part of September, and is usually not completed until the third week of December. It is first exhibited in Northern India, and frequently follows upon a final burst of rain and thunderstorms accompanying the march of a cyclonic storm from the head of the Bay. The skies clear with the dispersion of the storm, and light and dry westerly airs replace the damp winds which previously prevailed. The night temperature

decreases considerably with the increased dryness of the air, and the day temperature increases slightly on account of the absence of cloud. Hence the mean daily temperature is at first almost unchanged, but the diurnal range is largely increased.

Distribution of rainfall by season. The following is a statement of the mean or normal rainfall in India :—

Cold weather (January–February)	0.99 inches.
Hot weather (March–May)	4.58 „
South-west monsoon (June–September)	34.65 „
Retreating south-west monsoon (October–December)	4.95 „

Of the mean annual rainfall 12 per cent. occurs during the dry, and as much as 88 per cent. during the wet, season. The ratios differ very considerably in different parts of India, varying for the dry season from 3 per cent. in Bombay to 19 per cent. in Bengal, 21 per cent. in the Punjab, and 30 per cent. in Assam. These figures show the importance of the hot-weather or spring rainfall in Assam, and of the cold-weather rainfall in the Punjab.

Deficient rainfall and droughts. When the rainfall in any area is too scanty for the staple crops of that area, and a partial or complete failure of the harvest ensues, the season is one of drought which may, if severe and long continued, produce famine. A large deficiency of rain in an area of heavy rainfall, as for example Arakan, East Bengal, &c., rarely, if ever, affects the staple crops to an extent sufficient to justify the use of the term ‘drought’. Droughts chiefly occur in the interior districts where the normal rainfall, when properly distributed, is sufficient for the crops, though not ample or abundant.

The rainfall of the first half of the wet monsoon is much less valuable and effective, on the whole, for agricultural purposes than the rainfall of the second half. It is essential that there should be occasional to frequent rain in August and September, and occasional rain in October, in order to bring the chief food crops to perfection. An abrupt termination of the rains in August may cause the whole of the rice crop in a Province to fail to come to maturity.

In North-western and Central India not only may the rains of the south-west monsoon fail more or less completely, but also the preceding or following cold-weather rains; and

failure of the first is, in about two cases out of three, accompanied by failure of the second. This double drought entails loss of the harvest of both seasons, and is most disastrous. The most severe droughts in the Punjab and the Gangetic plain have been of this kind. Finally, a severe drought leading to famine may occur after a series of bad years, owing to excessive or deficient rain, either of which may diminish the crop returns for several years by large percentage amounts. This was the case in the Central Provinces in 1896.

LESSON 4. BOTANY

Variety of the Indian Flora. The Flora of British India is more varied than that of any other country of equal area in the eastern hemisphere, if not in the globe. This is due to its geographical extension, embracing so many degrees of latitude, temperate and tropical; to its surface, rising from the level of the sea to heights above the limits of vegetation; to its climates, varying from torrid to arctic, and from absolute aridity to a maximum of humidity; and to the immigration of plants from widely different bordering countries, notably of Chinese and Malayan on the east and south, of Oriental, European, and African on the west, and of Tibetan and Siberian on the north. Whether India is richer in number of genera and species than any other area on the globe of equal dimensions is doubtful; it is certainly far poorer in endemic genera and species than many others, especially China, Australia, and South Africa.

Of the Natural Orders of Flowering plants, and of Ferns and their allies, comprised in the Flora of British India, not one is peculiar to it; and if the genera common to it and to one or more of the adjacent countries be excluded, few endemic genera remain, and such of them as are endemic are local, and with few exceptions are restricted to one or two species. It may hence be affirmed that in a large sense there is no Indian Flora proper.

The number of recorded species of Flowering plants in India approaches 17,000, under 174 Natural Orders; and there are probably 600 species of Ferns and their allies. The largest Order of Flowering plants in all India is *Orchideae* (Orchids),

of which more than 1,600 species are recorded, and additions are constantly being discovered.

Three botanical areas. British India is primarily divisible into three botanical areas: a Himalayan, an Eastern, and a Western. The two latter are roughly limited by a line drawn meridionally from the Himalayas to the Bay of Bengal. The prominent characters of the three are—that the Himalayan area presents a rich tropical, temperate, and alpine Flora, with forests of Conifers, many Oaks, and a profusion of Orchids; that the Eastern has no alpine Flora, a very restricted temperate one, few Conifers, many Oaks and Palms, and a great preponderance of Orchids; that the Western has only one (very local) Conifer, no Oaks, few Palms, and comparatively few Orchids. Further, the Himalayan Flora abounds in European and Siberian genera; the Eastern in Chinese and Malayan; the Western in European, Oriental, and African. These three botanical areas are divisible into nine botanical Regions.

The Ceylon region. Ceylon, though so near in position to the Western Peninsula, and presenting so close an affinity to its Flora, as also to those of both Malabar and the Deccan, nevertheless contains so large a proportion of endemic genera and species that it constitutes a separate Region of the Indian Flora. The number of indigenous Flowering plants in Ceylon is about 2,800 species, under 149 Natural Orders, and that of Ferns and their allies 257 species. Of these 2,800 species no fewer than one-third (940) are non-peninsular, of which again 160 are natives of other parts of India, the majority of them being Burmese or Malayan, leaving 780 endemic Ceylon species.

The Burmese region. Burma is botanically by far the richest region of British India, and at the same time, as such, the least known. This is due to its great area; to its variety of climates, from a littoral and southern of great humidity to a drier interior, almost arid in places; to its complicated system of mountain ranges; and to its many geological features and surface soils. The greater portion of Burma having been comparatively recently brought under British rule, very large areas of it are as yet in great part botanically unvisited.

LESSON 5. ZOOLOGY

Richness of the Fauna. Animal life is not only abundant in British India, but it is also remarkably varied. The contrast between the damp, tropical, richly wooded hill ranges of Malabar or Tenasserim and the cold barren tracts of Ladākh in the Upper Indus drainage area is absolute, and the difference in the animals found is as great as in the climate. The beasts, birds, reptiles, and insects that inhabit the dense forests east of the Bay of Bengal and the mangrove swamps of the Burmese coast, where the annual rainfall exceeds 100 inches, could not exist in the almost rainless deserts of Sind and the Punjab. Although the Fauna of the dry regions is poor, that of the damp forests of Malabar, the Eastern Himālayas, Assam, and Burma is singularly rich; and the combined effect of local richness and of great difference of climate is that the number of kinds of animals inhabiting India and its dependencies is very large, far surpassing, for instance, that of the species found in the whole of Europe, although the superficial area of Europe exceeds that of the Indian Empire by about one-half.

Distribution of the Fauna. The following figures show the number of genera and species of Vertebrates described in the eight volumes of the *Fauna of British India* (1888-98). The lists include animals found in Ceylon as well as those of India and Burma:—

	Genera.	Species.
Mammals	115	401
Birds	593	1,617
Reptiles	146	534
Batrachians	24	130
Fishes	351	1,418

A few additions have since been made, but the increase is small except in the fishes. The number of Indian Invertebrata is very large, but few groups are sufficiently known for a trustworthy estimate to be made. Of moths alone 5,618 species were described as having been discovered up to 1896, and some hundreds have since been added. In the present sketch only Vertebrate animals are noticed. To deal with the Invertebrata would require more space than can be spared.

MAMMALS

Monkeys. The monkeys of India are numerous, and some of them are among the commonest wild animals of the country. The Apes, distinguished by the absence of tails, are no longer found in India itself or the Himālayas. But two species of Gibbon, which, although much smaller, resemble man in some details of structure as much as do the Gorilla and Chimpanzee, are found in Assam and Burma. The common monkeys, called



MONKEY.

Phot. Dando

bandar in Northern India, are found almost throughout the Empire. Eight or nine species are known within Indian limits. Among those most commonly tamed are the three long-tailed species and the shorter-tailed Bengal Monkey, all of which are carried about by jugglers and mountebanks throughout India, and taught to go through various performances. One genus of Indian monkeys consists of the Langurs or Hanumāns, renowned in Indian legend for having

aided Rāma in his expedition to Ceylon in pursuit of Rāvana, the ravisher of Sita. They are larger than the common monkeys, and have longer limbs and tails. Their calls are loud and peculiar, the principal being a joyous, rather musical whoop, uttered when bounding or playing about; another is a harsh guttural note, denoting alarm or anger—a familiar signal to many sportsmen, for it is the sound uttered by the Hanumān that has seen a tiger.

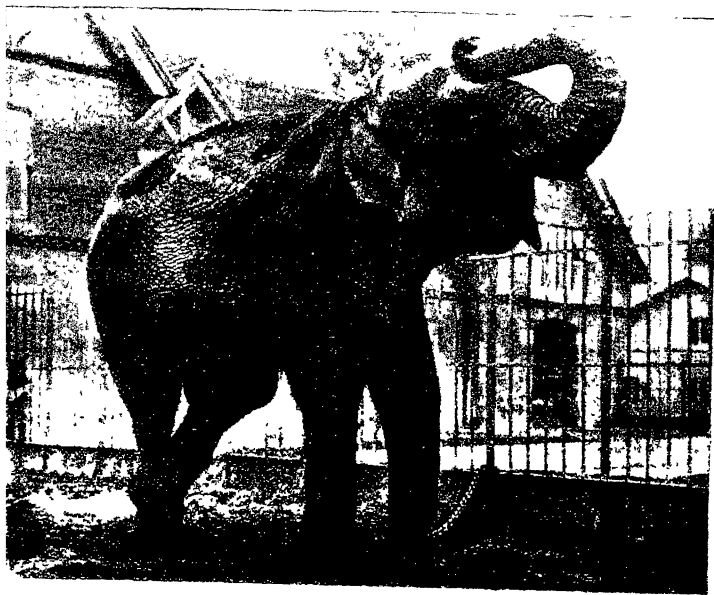


Phot. Dando

TIGER.

Carnivora. The Carnivores include the wild beasts of story, and comprise, in India, cats, civets, ichneumons, hyenas, dogs, martens, weasels, badgers, otters, and bears, as well as one member of the racoon family. Of the family of cats no less than seventeen species are found within Indian limits. The lion was formerly found throughout the greater part of North-western and Central India. Now the last remaining Indian lions are said to be confined to the Gīr in Kāthiāwār.

Tigers, though their numbers have been greatly diminished, are still found in all the wilder parts of India and Burma; but none occur, or, so far as is known, ever have occurred in Ceylon, a circumstance which may indicate that the tiger is a comparatively modern immigrant into Southern India, and did not exist there when Ceylon formed part of the continent. Leopards or panthers are more widely distributed than tigers,



ELEPHANT.

Phot Dando

and are scarcely less destructive. They are bolder and care less for the neighbourhood of water; hence they are often found both in rocky hills and in gardens about villages. Of the other cats, the Fishing Cat haunts the banks of rivers and marshes, and feeds chiefly on fish; the Ounce kills sheep and goats, wild or tame; the Clouded Leopard, Marbled Cat, Golden Cat, and Leopard Cat are forest hunters; and the Chaus and Rusty-spotted Cat prefer grassy plains. The Hunting Leopard, generally known in Europe as the Cheetah,

is not a common animal in India; it has from time immemorial been tamed and used for hunting antelopes, which it catches by means of its extraordinary speed.

The civet family is represented in India and Burma by twenty-one species, eight of which belong to the sub-family of ichneumons or mungooses. Of the latter the best known is the Common Indian Mongoose, renowned as the deadly enemy of snakes, and famous in Indian folk-lore for its reputed acquaintance with an antidote to the poison of the Cobra, a herb or root known as *munquswel*. The story is apocryphal: the mongoose is so quick and agile that it generally avoids the snake's fangs and seizes its adversary by the head; but if effectively bitten the mongoose, although apparently less quickly affected than other animals of a similar size, succumbs to the poison.

The dog family is represented by two wolves, a jackal, two so-called wild dogs, and five foxes. The Indian wolves are dangerous animals, and in parts of the country carry away many children, besides numerous goats and sheep. There is, however, in many parts of India, a great aversion to destroying wolves, in consequence of a widespread belief that the blood of a wolf, if shed on the lands of a village, renders them unfruitful. The Indian Jackal is the common scavenger of towns and villages, feeding on carrion and offal of all kinds. The last family of the Carnivera is that of the bears, with four Indian representatives.

Other Mammals. The next Order of Mammals—the *Insectivora*—comprises the tree-shrews, hedgehogs, moles, and shrews, together with a very remarkable animal of doubtful affinity—the flying lemur. No less than ninety-five species of bats (*Chiroptera*) were enumerated from within Indian limits when the mammalian section of the *Fauna* was published in 1891, and two or three have since been discovered. Eleven of these are fruit-eating bats, the largest of which are known as flying foxes. The *Rodents* form another large Order of small animals, comprising squirrels, marmots, rats and mice of various kinds, porcupines, and hares, all distinguished by a peculiar dentition with two large chisel-shaped incisors in the front of each jaw. As many as 106 species were known from the Indian area in 1891, and seven species have since been added, so that considerably more than a quarter of the

Mammals found in India and its dependencies belong to this Order. To the next Order—the *Ungulates*—belong elephants, horses, rhinoceros, tapirs, oxen, antelopes, goats, sheep, deer, camels, and swine, besides several generic forms not now found in India. Some of these, however—for instance, species of giraffe and hippopotamus—inhabited the country in past times. All the most valuable domestic animals are Ungulates. Of the order of the *Cetaceans* several kinds of whales and porpoises inhabit the seas around India, and two species are found in some of the larger rivers. Of the Order of the *Sirenians* the Dugong inhabits the shores of the Indian Ocean from East Africa to Australia, and has been found on the coasts of Malabar, Ceylon, the Andaman Islands, and the Mergui Archipelago. The last Order of Mammals—the *Edentata*—is represented in the eastern tropics by the Pangolins, of which three species occur within Indian limits. All are covered with large imbricate horny scales, and resemble a reptile rather than a mammal. They are toothless and live chiefly on ants.

BIRDS

The birds of India have been more extensively collected and better observed than any other group of animals. Of the 1,617 species enumerated in the *Fauna*, 936, or considerably more than half, belong to the Order of Passeres, and of about thirty species added since the Bird-volumes of the *Fauna* were published a large majority are Passerine.

REPTILES

The Reptiles of India are far more numerous than the Mammals, and more destructive to human life; snake-bites alone cause more deaths than all the wild beasts together. An enumeration made in 1900 shows 153 genera of Reptiles, containing 558 species. These belong to three Orders: (1) Crocodiles; (2) Tortoises and Turtles; and (3) Lizards and Snakes.

Crocodiles. Three kinds of Crocodile inhabit India, two with broad snouts belonging to the genus *Crocodilus*, and one with an elongate snout belonging to the genus *Gavialis* or Ghariyāl. The former are often called ‘alligators’ in India; but no representative of the American crocodiles, to which the name ‘alligator’ properly applies, is Indian, although one is

Chinese. The common fresh-water Crocodile of India, Ceylon, and Burma, found in almost every river and marsh and often in ponds, and known as the *magar* in Northern India, is a species that seldom, if ever, exceeds twelve feet in length. The large crocodiles found in Indian and Burmese estuaries and in some of the larger rivers, and occasionally seen in the sea, belong to another species, which attains much greater dimensions and has even been known to measure more than thirty feet long. This large crocodile is found in suitable localities all round the Bay of Bengal, and also west of Cape Comorin in Travancore and Cannanore, but it has not been positively identified further to the north-west. It is still uncertain which species inhabits the delta of the Indus, but the smaller species is found at Magar Pir, west of Karāchī, and in Baluchistān. It has a snout less than $1\frac{1}{2}$ times as long as it is broad; the large species has a snout more than $1\frac{1}{2}$ times as long as it is broad.

The Ghariyāl has had its name converted into 'Gavial', probably through a blunder or a misprint. It is purely a fish-eating river crocodile, never found in ponds or marshes, nor (so far as is known) in tidal estuaries. It inhabits the rivers Indus, Ganges, and Brahmaputra and their tributaries. It is also found in the Mahānadi river in Orissa, and the Kaladan in Arakan; and as the Ghariyāl never crosses the land as the smaller crocodile does, nor enters the sea as the larger species is in the habit of doing, its presence in the Mahānadi and Kaladan may indicate that these rivers were at one time tributaries of the Ganges.

Tortoises. The few species of land tortoises properly so called that are found in India and Burma are of no particular interest. The ordinary fresh-water tortoises inhabiting rivers and marshes are numerous and belong to various genera. The river turtles are widely distributed. In the seas around India are found the Green Turtle, the Hawk's-bill Turtle, the Logger-head, and the great Leathery Turtle. The Green Turtle alone is herbivorous and edible. The Hawk's-bill Turtle yields the tortoise-shell of commerce.

Lizards. Lizards and snakes are remarkably numerous, the former being represented in India, Ceylon, and Burma by 55 genera and 225 species, besides a Chameleon; and the latter by no less than 78 genera and 286 species. Of the

eight different families of Lizards represented in the Indian Empire, the Geckoes are the most familiar, because several species are found in houses, and are well known by the facility with which they cling to walls and ceilings by means of the peculiar plates with which the lower surface of their digits is furnished. Besides the small House Geckoes found commonly in India, a larger species, often a foot long, enters human habitations in Eastern Bengal and Burma, where it goes by the name of *touk-tai*, a name derived from its loud call. Other Geckoes also have calls, though generally less loud. The great majority of the Geckoes are nocturnal; they are found on rocks, stems of trees, or the ground.

Snakes. Snakes constitute more than half of the Indian Reptiles. In many, perhaps in most, parts of India it would nevertheless be difficult to find more than about a dozen species, and these would need some searching for; the large total is made up by a great number of local forms inhabiting particular localities. India is the only country in the world inhabited by all the known families of living snakes.

The great majority of Indian snakes—57 genera out of 78 and 200 species out of 286—belong to the Colubrine family, divided into three sections, the first comprising forms with solid teeth, the second including those with one or more of the posterior maxillary teeth grooved, and the third with the anterior maxillary teeth grooved or perforated. Snakes of the first section are harmless; those of the second division are probably all slightly poisonous, but they are in no case dangerous to human life; the third section includes some of the most poisonous snakes known. It should be added here that it is extremely difficult to distinguish a venomous snake from a harmless one except by the examination of its teeth. All dangerous venomous snakes, whether belonging to the Colubrine family or not, have a perforated or grooved fang in front of all the other teeth on each side of the upper jaw, and this fang is almost always considerably elongate.

BATRACHIANS

Frogs and Toads, &c. The Batrachians are divided into three Orders: (1) Frogs and Toads; (2) Newts and Salamanders; and (3) Caecilians. All are found in India, but the first alone

is represented by numerous species: the number of frogs and toads known in 1901 was 22 genera and 134 species. Among the commonest is a small species of frog which is found all over the country about ponds and marshes, and which attracts attention by its peculiar habit, when alarmed, of jumping along the surface of the water. Another frog that is not uncommon in Peninsular India and Ceylon is the 'Chunam frog' of Madras. This is one of the frogs distinguished by having the tips of the fingers and toes expanded, an arrangement which, by increasing the power of the animal to cling to inclined or vertical surfaces, enables it to climb trees or rocks. One species of true toad is common throughout India and Burma, and ascends the Himālayas to a considerable elevation. About fifteen other species have been described from various parts of the empire. Of the tailed Batrachia, to which belong salamanders and newts, only a solitary representative is found within Indian limits. The curious worm-like, burrowing, apodous Batrachia, the Caecilians, are rare, but their distribution in India is remarkable. Out of the sixteen genera known to exist, three genera, comprising among them five species, are found in British India. All of the species occur in the hills of Malabar, but only two of them are found in other parts of the Indo-Malay region, such as Ceylon, the Eastern Himālayas, Burma, and Malaysia. In this case, as in some others, the richness of the Fauna inhabiting the Southern Indian hills is noteworthy.

FISHES

In Day's two volumes, published in 1889, in the *Fauna of British India*, 351 genera and 1,418 species of fishes were enumerated. To those, 86 genera and 200 species were added by Alcock from the collections made by the Marine Survey steamer *Investigator* up to 1896, the additions consisting chiefly of deep-sea forms. A few more species have been recorded since. Of the whole, 79 genera and 361 species are fresh-water fishes, living in rivers, brooks, ponds, tanks, or marshes. Another large group of fishes inhabit the brackish water of estuaries, creeks, and lagoons. Some fishes are migratory, like the salmon and the common eel in Europe, and pass part of their existence in the sea, part in fresh

water; but the number of migratory species in India is not large, though certain kinds are of importance for food.

Cartilaginous and bony fishes. The fishes of India belong to two sub-classes, cartilaginous fishes and bony fishes. The highest Order, comprising the cartilaginous fishes, consists chiefly of sharks, dog fishes, and rays or skates. These forms abound in the Indian seas, and at least one shark and one or more rays ascend the larger rivers far beyond the limits of the tide. The dried fins of both sharks and rays are exported to China, and the flesh of some species is eaten, chiefly by the poorer classes, while oil for commercial purposes is obtained from their livers. The great majority of living fishes, both fluviatile and marine, are bony fishes, distinguished from the cartilaginous fishes by the more perfect ossification of their skeleton, especially of the vertebrae.

LESSON 6. ETHNOLOGY AND CASTE

The data of ethnology. The modern science of ethnology endeavours to define and classify the various physical types with reference to their distinctive characteristics, in the hope that, when sufficient data have been accumulated, it may be possible in some measure to account for the types themselves, to determine the elements of which they are composed, and thus to establish their connexion with one or other of the great families of mankind. In India, where historical evidence can hardly be said to exist, the data ordinarily available are of three kinds: physical characters, linguistic characters, and religious and social usages. Of these the first are by far the most trustworthy.

Indefinite physical characters. For ethnological purposes, physical characters may be said to be of two kinds: 'indefinite', which can only be described in more or less appropriate language; and 'definite', which admit of being measured and reduced to numerical expression. The former class, usually called descriptive or secondary characters, includes such points as the colour and texture of the skin; the colour, form, and position of the eyes; the colour and character of the hair; and the form of the face and features. Conspicuous as these traits

are, the difficulty of observing, defining, and recording them is extreme. Colour, the most striking of all, is perhaps the most evasive.

Definite physical characters. Craniometry and anthropometry. When we turn to the definite, or anthropometric, characters, we find ourselves upon firmer ground. In the early days of anthropology it was natural that the attention of students should have been directed mainly to the examination of skulls. This line of research led on to the measurements of living subjects, which have since been undertaken by a number of inquirers. Anthropometry, which deals with living people, while craniometry is concerned exclusively with skulls, possesses certain advantages over the elder science. The number of subjects available is practically unlimited; measurements can be undertaken on a scale large enough to eliminate not merely the personal equation of the measurer, but also the occasional variations of type arising from intermixture of blood; and the investigation is not restricted to the characters of the head, but extends to the stature and the proportions of the limbs. A further advantage arises from the fact that no doubts can arise as to the identity of the individuals measured. Scientific anthropometry was introduced into India on a large scale in 1886.

The seven main physical types of India. The physical data above discussed enable us to divide the people of the Indian Empire into seven main physical types. Counting from the north-western frontier, the main types are as follows :—

I. The *Turko-Irānian*, represented by the Baloch, Brāhui, and Afghāns of Baluchistān and the North-west Frontier Province.

II. The *Indo-Aryan*, occupying the Punjab, Rājputāna, and Kashmīr, and having as its characteristic members the Rājputs, Khattrīs, and Jāts.

III. The *Scytho-Dravidian*, comprising the Marāthā Brāhmins, the Kunbīs, and the Coorgs of Western India.

IV. The *Aryo-Dravidian*, or *Hindustāni*, found in the United Provinces, in parts of Rājputāna, and in Bihār, and represented in its upper strata by the Hindustāni Brāhman and in its lower by the Chamār.

V. The *Mongolo-Dravidian* or *Bengali* type of Lower Bengal

and Orissa, comprising the Bengal Brāhmans and Kāyasths, the Muhammadans of Eastern Bengal, and other groups peculiar to this part of India.

VI. The *Mongoloid* type of the Himālayas, Nepāl, Assam, and Burma, represented by the Kanets of Lāhul and Kulū; the Lepchās of Darjeeling and Sikkim; the Limbus, Murmīs, and Gurungs of Nepāl; the Bodo of Assam; and the Burmese.

VII. The *Dravidian* type, extending from Ceylon to the valley of the Ganges, and pervading Madras, Hyderābād, the Central Provinces, most of Central India, and Chotā Nāgpur. Its most characteristic representatives are the Paniyans of Malabar and the Santāls of Chotā Nāgpur. The Dravidians probably constitute the oldest of the seven types. Their low stature, black skin, long heads, broad noses, and relatively long forearm distinguish them from the rest of the population of India.

Origin of the Indo-Aryans. The uniformity of the Indo-Aryan type can be accounted for only by one of two hypotheses—that its members were indigenous to the Punjab, or that they entered India as a compact body, or in a continuous stream of families, from beyond the north-west frontier. The opinion of European scholars is unanimous in favour of the foreign origin of the Indo-Aryans. The arguments appealed to are mainly philological. We may assume for our present purpose that the ancestors of the Indo-Aryans came into India from the north-west, and that at the time of their arrival the Peninsula, as far as the valley of the Ganges and Jumna, was in the possession of the Dravidians. But we find no traces of Dravidian blood among the Indo-Aryans of to-day. It seems probable, therefore, that when the Indo-Aryans entered the Punjab they brought their own women with them: on no other supposition can we explain the comparative purity of their type.

The Aryo-Dravidians. For the origin of the Aryo-Dravidian type we need not travel beyond the ingenious hypothesis put forward by Dr. Hoernle. This theory supposes that after the first swarm of Indo-Aryans had occupied the Punjab, a second wave of Aryan-speaking people, the remote ancestors of the Aryo-Dravidians of to-day, impelled by some ethnic upheaval, or driven forward by the change of

climate in Central Asia, made their way into India through Gilgit and Chitral and established themselves in the plains of the Ganges and Jumna, the sacred Middle-land (*Maulhyadeśa*) of post-Vedic tradition. Here they came in contact with the Dravidians; here, by the stress of that contact, caste was evolved; here the Vedas were composed, and the whole fantastic structure of orthodox ritual and usage built up.

Social divisions: the tribe. Up to this point we have been dealing with the racial divisions of the people of India, with ethnology properly so called. We now turn to their social divisions, to the ethnographic data as distinguished from the ethnological. These divisions are either tribes or castes, which in their turn are further subdivided, with reference usually to matrimonial considerations. A tribe, as we find it in India, is a collection of families, or groups of families, bearing a common name which, as a rule, does not denote any specific occupation; generally claiming common descent from a mythical or historical ancestor and occasionally from an animal, but in some parts of the country held together rather by the obligations of blood-feud than by the tradition of kinship; usually speaking the same language; and occupying, or claiming to occupy, a definite tract of country. A tribe is not necessarily endogamous, i.e. it is not an invariable rule that a man of a particular tribe must marry a woman of that tribe.

Kinds of tribes. We may distinguish several kinds of tribes in various parts of India. The Dravidian tribe exists in its most compact form among the people of Chotā Nāgpur. Such a tribe is usually divided into a number of exogamous groups, each of which bears the name of an animal or plant common in the locality. The Mongoloid type of tribe, as found in the Nāgā Hills, is divided, somewhat on the Khond pattern of *gochis* or septs, into a number of *khels*, each of which is in theory an exogamous group of blood-relations, dwelling apart on its own territory and more or less at war with the rest of the world. Among the Turko-Irānians there seem to be two distinct types of tribe. The first comprises tribes based upon kinship, like the Afghān group of tribes known as Pathāns, or speakers of the Pashtū language. The second type of Turko-Irānian tribe is based primarily not upon agnatic kinship, but upon common good and ill: in other words, it is

cemented together only by the obligations arising from the blood-feud.

The word 'caste'. The word 'caste', which has obtained such a wide currency in the literature of sociology, comes from the Portuguese adventurers who followed Vasco da Gama to the west coast of India. The word itself is derived from the Latin *castus* (pure), and implies purity of breed.

Definition of caste. A caste may be defined as a collection of families or groups of families, bearing a common name which usually denotes or is associated with a specific occupation; claiming common descent from a mythical ancestor, human or divine; professing to follow the same calling; and regarded by those who are competent to give an opinion as forming a single homogeneous community. A caste is almost invariably endogamous in the sense that a member of the larger circle denoted by the common name may not marry outside that circle; but within this circle there are usually a number of smaller circles, each of which is also endogamous. Thus, it is not enough to say that a Brāhman at the present day cannot marry any woman who is not a Brāhman; his wife must also belong to the same endogamous division of the Brāhman caste.

Conversion of tribes into castes. All over India at the present moment we can trace the gradual and almost insensible transformation of tribes into castes. The main agency at work is fiction, which, in this instance, takes the form of the pretence that whatever usage prevails to-day has been so from the beginning of time. So far as present observation goes, several distinct processes are involved in the movement, and these proceed independently in different places and at different times:—

(1) The leading men of an aboriginal tribe, having somehow got on in the world and become independent landed proprietors, manage to enroll themselves in one of the more distinguished castes. They usually set up as Rājputs.

(2) A number of aborigines embrace the tenets of a Hindu religious sect, losing thereby their tribal name and becoming Vaishnavas, Lingayats, Rāmāyats, or the like.

(3) A whole tribe of aborigines, or a large section of a tribe enroll themselves in the ranks of Hinduism under the style of a new caste (e. g. the Rājbaṇsis) which, though claiming an

origin of remote antiquity, is readily distinguishable by its name from any of the standard and recognized castes.

(4) A whole tribe of aborigines, or a section of a tribe, become gradually converted to Hinduism without, like the Rājbanis, abandoning their tribal designation.

Types of caste. By such processes as these, and by a variety of complex social influences whose working cannot be precisely traced, a number of types or varieties of caste have been formed, which admit of being grouped as follows:—

(i) *The tribal type*, where a tribe like the Bhumij of Western Bengal has insensibly been converted into a caste.

(ii) *The functional or occupational type* is so numerous and so widely diffused, and its characteristics are so prominent, that community of function is ordinarily regarded as the chief factor in the evolution of caste. Almost every caste professes to have a traditional occupation.

(iii) *The sectarian type* comprises a small number of castes which commenced life as religious sects.

(iv) *Castes formed by interbreeding.*

(v) *Castes of the national type.* Where there is neither nation nor national sentiment, it may seem paradoxical to talk about a national type of caste. There exist, however, certain groups, usually regarded as castes at the present day, which cherish traditions of bygone sovereignty, and seem to preserve traces of an organization considerably more elaborate than that of an ordinary tribe. If the Marāthās can be described as a caste, their history and traditions certainly stamp them as a caste of the national type.

(vi) *Castes formed by migration.*

(vii) *Castes formed by changes of custom.* The formation of new castes as a consequence of neglect of established usage, or the adoption of new ceremonial practices or secular occupations, has been a familiar incident of the caste system from the earliest times.

Totemism. At the bottom of the social system, as understood by the average Hindu, we find, mainly in the Dravidian regions of India, a large body of tribes and castes each of which is broken up into a number of totemistic septs. Each sept bears the name of an animal, a tree, a plant, or of some material object, natural or artificial, which the members of that sept are prohibited from tilling, eating, cutting,

burning, carrying, using, &c., and the members of such a sept may not intermarry. In short, totemistic exogamy prevails in India on a fairly large scale, and is still in active operation.

Caste tendencies among Muhammadans. In the sight of God and of His Prophet all followers of Islām are equal. In India, however, caste is in the air; its contagion has spread even to the Muhammadans; and we find its evolution proceeding on characteristically Hindu lines. In both communities foreign descent forms the highest claim to social distinction; in both, promotion comes from the west. As the twice-born Aryan is to the mass of Hindus, so is the Muhammadan of alleged Arab, Persian, Afghān or Mughal origin to the rank and file of his coreligionists. And just as in the traditional Hindu system men of the higher groups could marry women of the lower, while the converse process was vigorously condemned, so, within the higher ranks of the Muhammadans, a Saiyid will marry a Sheikh's daughter but will not give his daughter in return; and intermarriage between the upper circle of *soi-disant* foreigners and the main body of Indian Muhammadans is generally reprobated, except in parts of the country where the aristocratic element is small and must arrange its marriages as best it can. Of course, the limits of the various groups are not defined as sharply as they are with the Hindus.

Absence of caste system in Baluchistān and Burma. On the outskirts of the Empire lie two regions where Hindu standards of social precedence and Hindu notions of caste are neither recognized nor known. In Baluchistān, until less than a generation ago, Hindus were tolerated only as a useful class of menials who carried on the petty trade which the fighting races deemed below their dignity. In Burma caste is so little known that the Burmese language possesses no word for it; while one of the difficulties of conducting the census of the numerous Indian immigrants was the impossibility of making the average Burman enumerator understand the meaning of the Indian term *zāt* or *jāt*.

Distribution of social groups. No attempt can be made here to analyse and explain the distribution of the nearly 2,400 castes and tribes which have been enumerated in the 1901 Census. Some castes are diffused over the whole of

India, while others are localized in particular Provinces or tracts of country. The typical instance of a widely diffused caste is furnished by the Brāhmins, who number nearly fifteen millions. Of the localized groups a large number are admittedly tribes. The Bhil, Gond, Koli, and Santāl come within this category, and are still outside the Hindu social system. The Doms, Dosādhs, Gūjars, Jāts, Kaibarttas, Namasūdras (Chandāls), Pods, Nāyars, Pallis, Paraiyans (Pariahs), and Rājansi-Koch represent tribes which have been transformed into castes at a comparatively recent date and still retain some traces of the tribal stage of development.

The genesis of caste. The principle upon which the caste system rests is the sense of distinction of race indicated by differences of colour: a sense which, while too weak to preclude the men of the dominant race from intercourse with the women whom they have captured, is still strong enough to make it out of the question that they should admit the men whom they have conquered to equal rights in the matter of marriage. Once started in India, the principle was strengthened, perpetuated, and extended to all ranks of society by the fiction that people who speak a different language, dwell in a different district, worship different gods, eat different food, observe different social customs, follow a different profession, or practise the same profession in a slightly different way must be so unmistakably aliens by blood that intermarriage with them is a thing not to be thought of.

It is clear that the growth of the caste instinct must have been greatly promoted and stimulated by certain characteristic peculiarities of the Indian intellect—its lax hold of facts, its indifference to action, its absorption in dreams, its exaggerated reverence for tradition, its passion for endless division and subdivision, its acute sense of minute technical distinctions, its pedantic tendency to press a principle to its furthest logical conclusion, and its remarkable capacity for imitating and adapting social ideas and usages of whatever origin. It is through this imitative faculty that the myth of the four castes (the Brāhman, the Kshattriya, the Vaisya, and the Sūdra)—evolved in the first instance by some speculative Brāhman, and reproduced in the popular versions of the Rāmāyana which the educated Hindu villager studies as diligently as the English rustic used to read his Bible—has

attained its wide currency as the model to which Hindu society ought to conform.

LESSON 7. LANGUAGES

The vernaculars of India. Five great families of human speech have their homes, as vernaculars, in India. These are the Aryan, the Dravidian, the Muṇḍā, the Mon-Khmer, and the Tibeto-Chinese. The oldest languages of India are probably those which we class as Muṇḍā, and if we arranged our subjects according to priority of occupation, we should have to commence with them. But practical reasons compel us to begin with the Aryan forms of speech, for, whether we consider the influence which they have exercised upon the development of Indian civilization, or the total number of their speakers, they are by far the most important.

The Indo-Europeans. The Aryan languages form one branch of the great Indo-European family of speeches. The original home from which the populations whom we now group together under the title of 'Indo-European'¹ spread over Europe and parts of Western and Southern Asia has been a subject of long discussion, extending over many years. It has been located on the Caucasus and on the Hindu Kush. Other scholars maintained that it was in North-western Europe. Others have claimed Armenia and the country round the Oxus and Jaxartes as the centre of dispersion. The latest researches tend to show that the oldest domicile of the Indo-Europeans is probably to be sought for on the common borderland of Europe and Asia—in the steppe country of Southern Russia. Here they were a pastoral people; here some of their number took to agricultural pursuits; and from here they wandered off to the east and to the west.

From the point of view of language, the first great division of the Indo-Europeans was into the so-called *centum*-speakers and *satem*-speakers. The former, who originally began the word for 'hundred' with the letter *k*, travelled westwards and do not concern us. The latter, who expressed the same idea

¹ The Indo-Europeans are often called 'Aryans', but in this chapter the term is reserved for the Aryans properly so called, — the Indo-European clan which migrated into India and Persia.

with some word beginning with a sibilant, mostly wandered to the east, and from their language have descended the speech-families which we call Aryan, Armenian, Phrygian, Thracian, Illyrio-Albanian, and Balto-Sclavonic. We have only to do with the first of these six.

One of the clans of these *satem*-speakers, who called themselves Aryans, migrated westwards. They settled in the country lying on the banks of the Jaxartes and the Oxus, and we may, with some certainty, name the oasis of Khiva as one of their most ancient seats. Thence, still a united people, they worked their way up the courses of these rivers into the highlands of Khokand and Badakhshān, where they split into two sections, one portion marching south, over the Hindu Kush, into the valley of the Kābul, and thence into the plains of India, and the other eastwards and westwards, towards the Pāmirs and towards what is now Merv and Eastern Persia. After the separation, the common Aryan speech developed on two different lines, and became, on the one hand, the parent of the Indo-Aryan, and, on the other hand, the parent of the Eranian (often spelt 'Iranian') family of languages.

Indo-Aryan languages. With regard to the immigration of the Indo-Aryans through the Kābul valley from the west, it is not suggested that this took place all at once. On the contrary, it was a gradual affair extending over centuries. The latest comers would not necessarily be on good terms with their predecessors, who quite possibly opposed them as intruders, nor did they speak the same language. At the earliest period of which we have any cognizance, we see the Punjab peopled by various Indo-Aryan tribes, one at enmity with another, and sometimes alluding to its opponents as a set of unintelligible barbarians.

In Sanskrit geography India is divided into the *Madhya-dēśa* or 'Midland', and the rest. The Midland is constantly referred to as the true pure home of the Indo-Aryan people, the rest being, from the point of view of Sanskrit writers, more or less barbarous. The Midland extended from the Himālayas on the north to the Vindhya Hills on the south, and from Sahriud (Sirhind) in the Eastern Punjab on the west to the confluence of the Ganges and the Jumna on the east.

The state of affairs at the present day is as follows:— There is a Midland Indo-Aryan language, occupying the Gangetic Doāb and the country immediately to its north and south. Round it on three sides is a band of Mixed languages, occupying the Eastern Punjab, Gujarāt, Rājputānā and Oudh, with extensions to the south in Baghelkhand and Chhattisgarh. Again, beyond these, there is a band of Outer languages, occupying Kashmir, the Western Punjab, Sind (here it is broken by Gujarāt), the Marāthā country, Orissa, Bibār, Bengal, and Assam. To these should be added the Indo-Aryan languages of the Himālayas north of the Midland, which also belong to the Intermediate Band, being recent importations from Rājputānā. The Midland language is therefore now enclosed in a ring fence of intermediate forms of speech.

Indo-Aryan vernaculars. The following list shows the modern Indo-Aryan vernaculars:—

	Number of speakers (1901).
A. Language of the Midland .	
Western Hindī	40,714,925
B. Intermediate languages :	
a. More nearly related to the Midland language.	
Rājasthānī	10,917,712
The Pahārī languages	3,124,681
Gujarātī	9,439,925
Panjābī	17,070,961
b. More nearly related to the Outer languages.	
Eastern Hindī	22,136,358
C. Outer languages :	
a. North-Western group.	
Kāshmīrī	1,007,957
Kohistānī	86
Lahndā	3,337,917
Sindhī	3,494,971
b. Southern language	
Marāṭhī	18,237,899
c. Eastern group.	
Bihārī	34,579,844
Oriyā	9,687,429
Bengali	44,624,048
Assamese	1,350,846
Total	<u>219,725,509</u>

Of these, the Pahārī languages are offshoots of Rājasthānī spoken in the Himālayas. Kohistānī includes the mixed dialects of the Swāt and Indus Kohistāns. The Census of

1901 did not extend to these tracts, and hence few speakers were recorded.

Hindī. The word 'Hindī' is very laxly employed by English writers. It properly means 'Indian', and can be used to signify any Indian language. By Europeans it is sometimes reserved for a particular form of Hindostānī, but is more often employed as a vague term to denote all the rural dialects of the three languages—Bihārī, Eastern Hindī, and Western Hindī—spoken between Bengal proper and the Punjab. In the present pages it is used only in the former of these two senses; that is to say, as meaning that form of Hindostānī which is the prose literary language of those Hindus who do not employ Urdū. In English 'Hindī' is specially applied to the languages of Oudh and of the Midland, and, to avoid the introduction of a strange terminology, these are here called 'Eastern Hindī' and 'Western Hindī', respectively. They are two quite distinct languages.

Western Hindī. Western Hindī is, therefore, the modern Indo-Aryan vernacular of the old Midland; and, as in ancient times, it is by far the most important of all the languages of India. Hindostānī is that dialect of Western Hindī whose home is the Upper Gangetic Doāb, in the country round Meerut. The city of Delhi lies close to the southern border of this tract. Here the dialect was in general use, and from here it was carried everywhere in India by the lieutenants of the Mughal empire. The Persianized form of Hindostānī is known as Urdū, a name derived from the *Urdū-e-mu'alla*, or royal military bazar outside Delhi Palace, where it took its rise. In the Deccan, even where Dravidian languages are the principal vernaculars, Urdū is very generally employed by Musalmāns, and here Urdū literature took its rise. During the first centuries of its existence, Urdū literature was entirely poetical. Prose Urdū owes its origin to the English occupation of India, and to the need of textbooks for the College of Fort William. The Hindī form of Hindostānī was invented at the same time by the teachers at that college. The other dialects of Western Hindī are Bāngarū, Braj Bhāshā, Kanaujī, and Bundelī. As languages, Western Hindī, and its neighbour Eastern Hindī, rival English in their flexibility and copiousness. They both have enormous native vocabularies, and each has a complete apparatus for the expression of

abstract terms. Their old literatures contain some of the highest flights of poetry and some of the most eloquent utterances of religious devotion which have found their birth in Asia.

Rājasthānī. Rājputāna, in which Rājasthānī is spoken, is divided into many states and many tribes. Each claims to have a language of its own, but all these are really dialects of one and the same form of speech. The western dialect, Mārwarī, is by far the most important, and its speakers have carried it all over India. It is the most typical of the Rājasthānī dialects, and has a copious literature, written in a peculiar character, the aspect of which is familiar to every Indian official who has had occasion to inspect the accounts of native bankers.

Gujarātī. Gujarātī has a printed character of its own. Literature has always flourished in Gujarāt from very early times, and the modern vernacular presents no exception.

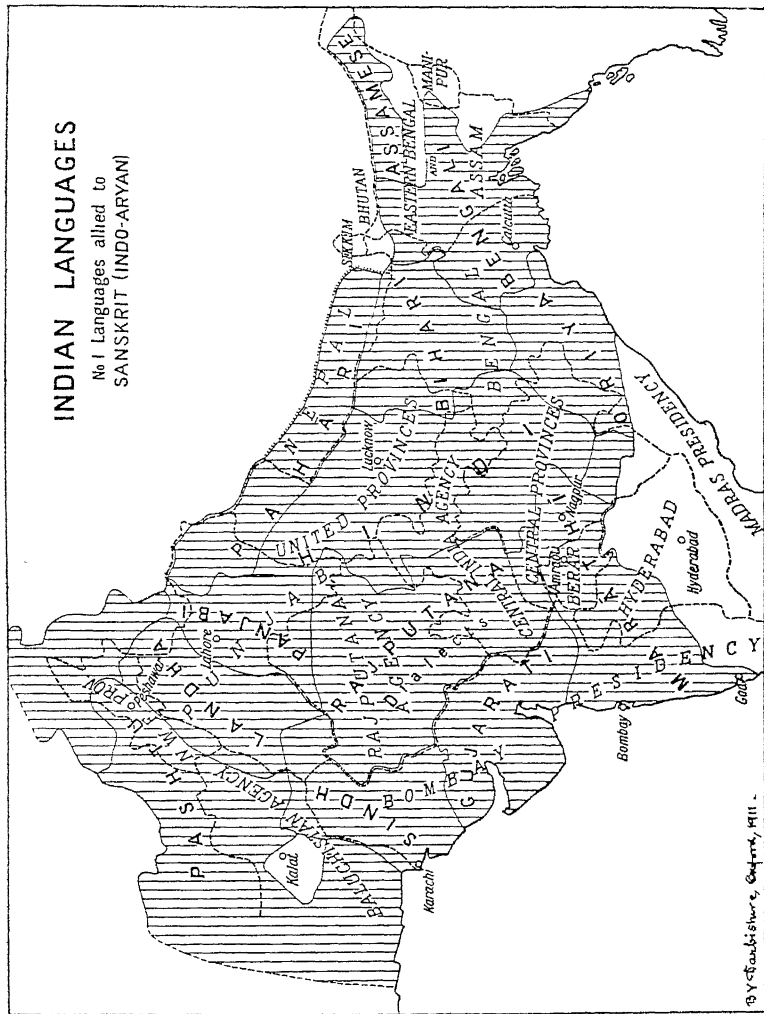
Panjābī. Panjābī is spoken in the Central Punjab, and is the vernacular of the Sikhs. Immediately to its west lies Lahndā, an Outer language, and the change from the one to the other is most gradual. The standard Panjābī is that spoken in the neighbourhood of Amritsar. Of the languages connected with the Midland, Panjābī is the purest and most free from the burden of terms borrowed from either Persian or Sanskrit. While capable of expressing all ideas, it has a charming rustic flavour indicative of the national characteristics of the sturdy peasantry that use it.

Eastern Hindī. Eastern Hindī is the language of Oudh, of Baghelkhand, and of Chhattīsgarh in the Central Provinces, and has a long history behind it. It is the vernacular of the country in which the hero Rāma-chandra was born; and the Jain apostle Mahāvīra used an early form of it. Eastern Hindī has a great literature, probably larger than that of any other of the modern Indo-Aryan vernaculars. Overshadowed at the present day by the official Hindostānī, it has been studied by but few Europeans, but no one who has once wandered into its magic garden ever leaves it willingly.

Bengalī. In its own home Bengalī has a greater number of speakers than any other Indian language. Over the huge area in which it is a vernacular it is by no means uniform. Its main dialectical division is not, however, according to

INDIAN LANGUAGES

No 1 Languages allied to
SANSKRIT (INDO-ARYAN)



locality, but lies between the literary and the spoken language. The literary dialect is never used when speaking, except in formal addresses and the like. Even the most highly educated natives employ the colloquial dialect in their ordinary conversation. The literary style dates from the revival of learning which took place, under English influences, at the commencement of the last century. There arose a demand for prose literature, and the task of supplying it fell into the hands of Sanskrit-ridden pandits. Anything more monstrous than this prose dialect, as it existed in the first half of the nineteenth century, it is difficult to conceive. During the past fifty years there has been a movement, without much success, to reduce this absurd Sanskritization. This literary Bengali is the official language of Government and of missionaries, and (with few exceptions) is taught in the grammars written for European students. Bengalis themselves call their Sanskritized book language 'Sādhū-bhāṣā', i.e. the 'excellent speech'; but the adjective which they apply to anything approaching their true vernacular is the significant one of 'sweet'. It is this 'sweet' language which every one with a pen in his hand, be he European or native, endeavours to ignore. It is an instance of history repeating itself. In the old days the classical language was called *sanskrit*, 'purified,' but the epithet applied to the true vernacular Prākṛit was *amīa*, or 'nectar'.

Dravidian languages. The Dravidian race is widely spread over India, but all the members of it do not speak Dravidian languages. In the north many of them have become completely Aryanized, and have adopted the language of their conquerors while they have retained their ethnic characteristics. Besides these, Dravidians are almost the only speakers of two other important families of speech, the Muṇḍā and the Dravidian proper. Owing to the fact that these languages are nearly all spoken by persons possessing the same physical type, many scholars have suggested a connexion between the two groups of speech, but a detailed inquiry carried out by the Linguistic Survey of India has shown that there is no foundation for such a theory. Whether we consider the phonetic systems, the methods of inflexion, or the vocabularies, the Dravidian have no connexion with the Muṇḍā languages. They differ in their pronunciation,

in their modes of indicating gender, in their declensions of nouns, in their method of indicating the relationship of a verb to its objects, in their numeral systems, in their principles of conjugation, in their methods of indicating the negative, and in their vocabularies. The few points in which they agree are points which are common to many languages scattered all over the world.

Leaving, therefore, the fact of the Dravidian *race* speaking two different families of languages to be discussed by ethnologists, we proceed to consider those forms of speech which are called 'Dravidian' by philologists. Most of these are spoken in Southern India or in the hills of Central India. Two of them have found their way into Chotā Nāgpur and the Santāl Parganas, where they exist side by side with Muṇḍā dialects; and one, Brāhūī, has its home far to the north-west, in Baluchistān. The last was not known to Sanskrit writers, who were familiar with two great languages spoken in their time all over Southern India: namely, the *Andhra-bhāṣā* and the *Drāviḍa-bhāṣā*, the former corresponding to the modern Telugu, and the latter to the rest. This old division agrees with the classification of the modern vernaculars, which is as follows:—

	Number of speakers (1901).
A. Drāviḍa group:	
Tamiḷ	16,525,500
Malayāḷam	6,029,304
Kanarese	10,365,047
Koḍagu	39,191
Tulu	535,210
Toda	805
Kota	1,300
Kurukh	592,351
Malto	60,777
B. Intermediate languages .	
Gonḍ, &c.	1,123,974
C. Andhra group:	
Telugu	20,696,872
Kandh	494,099
Kolāmī	1,505
D. Brāhūī	48,589
Total	<u>56,514,524</u>

The Muṇḍā languages. The Muṇḍā languages are often

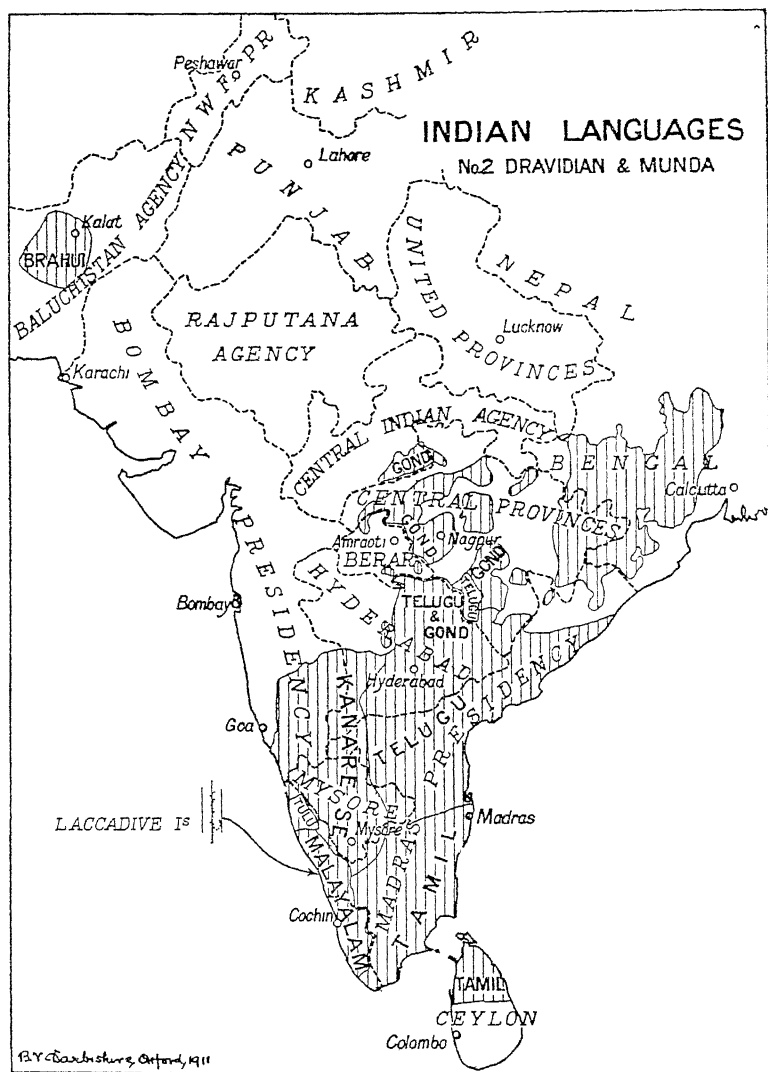
called 'Kolarian', a name which is founded on a false theory, and which is, moreover, misleading. These languages are among those which have been longest spoken in India, and may, with great probability, claim to be aboriginal. They are agglutinative, and preserve this characteristic in a very complete manner. Suffix is piled upon suffix, and helped out by infix, till we obtain words which have the meaning of a whole sentence.

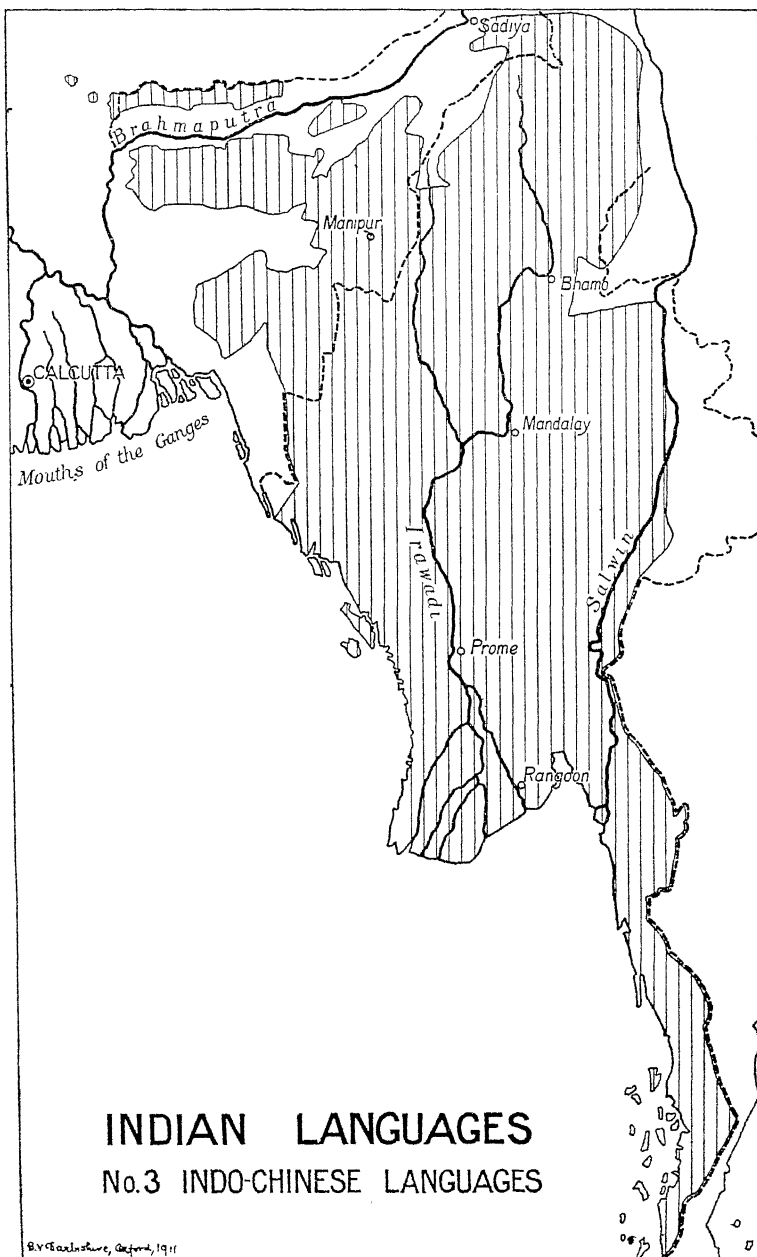
The principal home of the Muṇḍā languages (the *race* is much more widely spread) is Chotā Nāgpur. Speakers are further found in the adjoining Districts of Bengal, Orissa, Madras, and the Central Provinces, with an outlying colony far to the west in the Mahādeo hills north of Beār. The following is a list of these forms of speech :—

	Number of speakers (1901).
Kherwārī	2,784,395
Kürkü	87,675
Khariā	101,986
Juāng	10,853
Savara	157,186
Gadaba	37,230
Total	<u>3,179,275</u>

None of the Muṇḍā languages has any proper written character or any literature. The Roman character is generally employed for recording them.

The Indo-Chinese languages. The languages of Further India, together with those spoken in Tibet, are usually grouped under the general name of 'Indo-Chinese', which includes two distinct families, the Mon-Khmer and the Tibeto-Chinese. The original home of all these people seems to have been North-western China, between the upper courses of the Yang-tse-kiang and the Ho-ang-ho, and from here they spread out in all directions. So far as British India is concerned, they followed river valleys in their migrations, down the Chindwin, the Irrawaddy, and the Salween into Burma, down the Brahmaputra into Assam, and up the Brahmaputra into Tibet. From Tibet they occupied the Himālayas, and are now found in Nepāl and in other mountainous tracts lying south of the main watershed. All the Indo-Chinese languages are monosyllabic.





The Mon-Khmer languages. The Mon-Khmer languages are numerous in Indo-China. In British India they are only four in number. The most important is Khāsi, spoken in the hill country south of the Central Assam valley, where it has survived as an island amid a sea of Tibeto-Burman speech. It has been given a literature by the missionaries who work among its speakers; and this language, which a century ago was rude, uncultured, and unwritten, is now one of the Indian vernaculars recognized in the examination halls of the Calcutta University. It is written in the Roman character.

The Tibeto-Burman languages. The Tibeto-Burman branch of the Tibeto-Chinese languages is very widely spread. It includes two great languages, Tibetan and Burmese, each of which has an alphabet of its own akin to Deva-nāgarī, as well as an extensive literature.

LESSON 8. RELIGIONS

Vedic period; c. 1500—200 B.C. The literary records of the religions of India begin with the Veda, which is not, as is sometimes supposed, a body of primitive popular poetry, but rather a collection of artificially composed Hymns, the work, in the main, of a priestly class. Its tone generally is ritualistic, the Hymns being intended for use in connexion with the Soma oblation and the fire-sacrifice. In the Veda the powers and phenomena of Nature are invoked as personified gods, or even as impersonal existences. The ritual to which these Hymns were an accompaniment was by no means of a simple type, though much less highly developed than in the succeeding period.

The Vedas. The Rig-veda, with its supplement, the Sāma-veda, was composed when the Aryans had reached the point of junction of the Punjab rivers with the Indus; the Black and White Yajur-veda when they had reached the neighbourhood of the Sutlej and Jumna; the Atharvan, combining the lower beliefs of Aryans and aborigines, when the new-comers had penetrated as far as Benares.

Vedic Theology. Theology, as we find it in the Veda, begins with the worship of the things of heaven, and ends with the worship of the things of earth. We have, first, the

worship of the sky gods; then of those that rule the atmosphere; lastly, of those that rule on earth. But there was in Vedic times a groping after one Supreme Being. Even at this time the deepest thinkers began to see dimly that the Ātman, or Spirit, pervaded all things, and that the world and even the gods themselves were but manifestations of it. Thus at the close of the Vedic period philosophers had gained the idea of a Father-god, known as Prajāpati, or Visvakarman, names which in the older Hymns are merely epithets applied to particular gods. This theory was further developed in the next period, that of the Brāhmanas.

The Brāhmana period; c. 800—500 B.C. A Brāhmana is a digest of the dicta on questions of ritual traditionally ascribed to the earlier teachers, and intended for the guidance of priests. The Aryans were by this time permanently settled in Madhya-desa, the 'Middle Land', or Upper Gangetic valley. This was the birthplace of the special form of faith known as Brāhmanism. The old theory of the Atman was developed, until all forces and phenomena were identified with one Spiritual Being, which when unmanifested and impersonal is the neuter Brahma; when regarded as a Creator, the masculine Brahmā; when manifested in the highest order of men, Brāhmana, the Brāhman Levite class. The writers of this period concern themselves little with theology; what they are interested in is worship. Every religious act must be accompanied by its special Mantra, or formula, each word of which is momentous, each tone fraught with mystery.

Theology in the Upanishads. The speculations of the sages of the Brāhmana period were extended in the Upanishads, or expositions of the hidden spiritual doctrine. The Ātman, or 'soul' of the Brāhmanas, is now identified with Brahma, or the holy principle which animates Nature; in other words, the Ātman replaces the personal Prajāpati. True knowledge leads to supreme bliss by absorption into Brahmā, and this is combined with the theory of transmigration, which was fully established when Buddha arose, for he accepted it without question. This was not so much a new philosophy as a new religion, a religion without rites and ceremonies, involving existence without pain of desire, life without end, freedom from re-birth. 'The spirit of the sage becomes one with the Eternal; man becomes God.'



BUDDHA.

The anti-Brāhmanical reaction. The mass of the people were little affected by such speculations, and the time was ripe for change. The reformation assumed a twofold shape: first, the rise of the two so-called 'heretical' movements, which culminated in Buddhism and Jainism; secondly, the almost contemporaneous evolution of the sectarian gods (Siva and Vishnu).

Gautama, the Buddha, c. 596—508 B.C. The leader of one of these movements of reform was Gautama, the son of a petty prince, or headman, of a group of villages occupied by the Sākya, one of the many Kshatriya clans in the tarai, or swampy lowlands at the foot of the Lower Himālayas. He is said to have enjoyed in his early years all that a life of sensuous ease could provide. After his 'enlightenment' he announced the Fourfold Truth—that life is the vanity of vanities; that birth and re-birth, the cycle of reincarnation, are the result of passion and desire; that to escape these evils desire must be destroyed by what he called the Eightfold Path—right belief, right resolve, right word, right act, right life, right effort, right thinking, right meditation. This was the Gospel which the Master, now become Buddha, 'the Enlightened One,' preached during some five-and-forty years' wanderings in Magadha, the modern Bihār, and the neighbourhood of Benares.

Jainism. Jainism is the second of the 'heretical' movements which led to the establishment of the non-Brāhmanic orders. Like Buddhism, it had its rise in Magadha, and its founder, like Gautama, was drawn from the warrior class. The two teachers were contemporaries, the life of Vardhamāna extending from about 599 to 527 B.C. On the establishment of his order he gained the name of Mahāvīra, 'the great hero'; the title which he afterwards assumed, Jina, 'the victorious,' gave a name to the order which he founded. The resemblances between Jainism and Buddhism are due, not to imitation, but to the fact that the basis of both was the same. In both the goal is Nirvāna, but the term has a somewhat different connotation in the two beliefs. With the Buddhist it implies extinction; with the Jain, escape from the body, not from existence. The moral rules imposed upon neophytes are much the same in both orders. The fivefold vow of the Jains prescribes sanctity of animal life; renunciation of lying,

which proceeds from anger, greed, fear, or mirth; refusal to take things not given; chastity; renunciation of worldly attachments.

Brāhmanism modified into Hinduism. These movements in opposition to Brāhmanism, combined with the extension of Aryan supremacy, which involved the absorption of increasing masses of the aboriginal races, led to a modification of the primitive belief. The result of this was the Hinduism of the present day, which with more or less variance of practice is now the creed of the vast majority of the people. The reform of Brāhmanism went on side by side with the growth of Buddhism and Jainism, and the three movements are but differing phases in the evolution of modern Hinduism. The means by which this evolution was accomplished were in the case of Brāhmanism twofold: first, the creation of a national ideal of worship; secondly, the combination of non-Aryan forms of belief with the older creed. The first movement finds its record in the epics, with some information to be gathered from the law literature, and a few sidelights from the inscriptions. The second is to be traced in the body of sacred writings known as the Purānas.

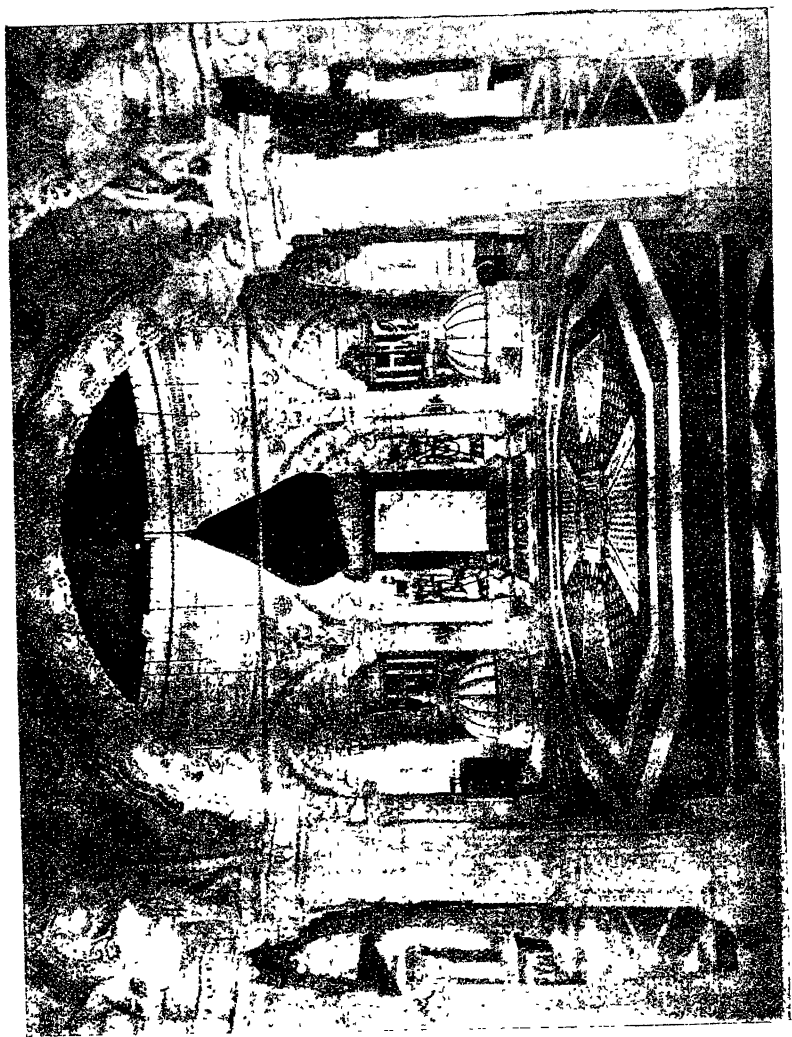
The religious influence of the epics. The effect of the epics—the Mahābhārata and the Rāmāyana—was to form a gallery of heroic personages drawn from local tradition, who have been revered by Hindus of succeeding times. Thus, in lieu of vague abstractions and the shadowy Vedic gods, now in a state of decadence, the Mahābhārata provides a series of heroic men and women—the knightly Pāndavas and their common spouse, Draupadī, as in the Rāmāyana Rāma and Sitā, have formed models of the life of holiness to later generations. To this day the latter epic, transmuted into the old Eastern Hindī of Northern India by the genius of Tulsī Dās (died 1624 A.D.), is the Vaishnava Bible, and episodes from it form the subject of the most popular village drama.

Sivaism and Vaishnavism. It is much more difficult to trace the stages of the evolution which led to the sectarian worship of Siva and Vishnu. To the Hindu of to-day Vishnu and Siva form the two poles of his religion. Siva, to use the words of Sir Alfred Lyall, 'represents the earliest and universal impression of Nature upon man—the impression of endless and pitiless change. He is the destroyer and rebuilder

of various forms of life; he has charge of the whole circle of animated creation, the incessant round of birth and death in which all Nature eternally revolves.' The extension of Sivaism was the work of two great missionary preachers—Kumārila Bhatta, a Brāhman of Bihār, and his more famous disciple Sankarāchārya.

The forms of Vishnu are manifold. But, as popular gods, his most important incarnations are Krishna and Rāma. The popularization of the creed was the work of a line of reformers, of whom the first was Rāmānuja, a South Indian Brāhman, who is said to have lived between 1017 and 1137 A. D. Fifth in succession to him was Rāmānand, who lived during the fourteenth century, and preached the worship of Vishnu under the form of Rāma. One of his twelve disciples was Kabīr (1380–1420 A. D.). His teaching is specially remarkable inasmuch as in later times it inspired the founders of Sikhism. Its chief note is to link Hinduism with Islam. A weaver by caste, Kabīr taught the spiritual equality of all men. Ali or Rāma, said he, are only different names for the same god. His apophthegms are ever on the lips of the educated man of Northern India, whether Hindu or Musalmān, and have been incorporated into the Granth or Sikh Scripture.

Sikhism. Sikhism is one of those movements which started as a religious reform and ended in becoming a political organization. Founded in the Punjab by Guru Nānak (1469–1558 A. D.), it was further developed by succeeding Gurus, notably by Guru Govind Singh (1675–1708 A. D.). The main object of the early Gurus was to distinguish their disciples from the Hindus among whom they lived. Hence Guru Govind prescribed that every Sikh should bear the five marks, known as the five *ka*—the hair uncut (*kēs*), the short drawers (*kachh*), the *kara*, or iron bangle, the *khanda*, or steel knife, the *kangha*, or comb; that he should abstain from tobacco, and eat no meat save that of animals decapitated by a single blow at the back of the neck. The formula of Nānak was the Unity of God and the Brotherhood of Man. The strength of Sikhism lay not in the novelty of its message, but in the social observances, which were designed to stimulate the local patriotism of its members and to make the followers of the Guru a peculiar people.



THE GOLDEN TEMPLE AT AMRITSAR.



GURU NANAK.

The Śāktas. The third great sect which shares with Saivas and Vaishnavas the allegiance of Hindus is that of the Śāktas. It is based on the worship of the active female principle (*prākṛiti*), as manifested in one or other of the forms of the consort of Siva—Durgā, Kālī, or Pārvatī.

Sects of Islām: Sunnis and Shiahs. The main sects of Islām are the Sunnis and the Shiahs. The schism arose within the first century after the death of the Prophet, the Sunnis, or Traditionalists, accepting the Sunnat or collected body of usage, as possessing authority concurrent with or supplementary to the Korān, a view which the Shiahs reject. Shiahs maintain that the Imāmate, or temporal and spiritual headship of the faithful, was by divine right vested in Ali and his descendants through Hasan and Husain, the ill-fated grandsons of the Prophet. They necessarily reject as usurpers the first three Imāms—Abu Bakr, Umar, and Usmān—whom the Sunnis respect. Sunnis are largely in excess in Turkey and India; Shiahs in Persia and Afghānistān, their chief seats in India being Lucknow and Hyderābād. The Shiah movement, in fact, is strongest where there is least Arab intermixture in the population.

The Islām revival. In Northern India Islām displays a genuine deepening of religious life, in the direction of increased religious instruction for the young, and translations of the sacred books into the local dialects, of which cheap copies are widely circulated in the country districts. Combined with this, a desire for education has spread among the higher classes, of which the most noteworthy result has been the foundation of the Anglo-Oriental College at Aligarh, which represents the progressive party in Islām, opposed to fanaticism, and welcoming the science of the West.

Mazdaism. The second of the foreign religions is Mazdaism, the Pārsī faith, which takes its name from Ahura Mazda (Ormuzd), the spirit of good, who, according to the dualistic hypothesis, contends with Angro Mainyūsh (Ahriman), the spirit of evil. It is also known as Zoroastrianism, from Zoroaster, the Greek rendering of the old Iranian Zarathushtra, the modern Persian Zardusht. The Pārsīs number at present on Indian soil 94,000, of whom all but 7,000 are found in Bombay and Baroda.

Jews. From the statistics it appears that the number of

Indian Jews has increased within the last twenty years from 12,000 to 18,000. There are two well-established Jewish colonies, one at Kolāba in Bombay, the other at Cochin on the Malabar coast.

Christianity. The history of Christianity in India begins with the establishment of the Syrian Church in Malabar. This Church was certainly in existence as early as the beginning of the sixth century. The first regular Portuguese Mission, under brethren of the Franciscan Order, arrived in 1500 A. D. The Jesuit Mission in Madura dates from 1606. The tolerance, or indifference, of Akbar and his successors permitted the foundation of Catholic Missions in Northern India. The first Protestant Mission was established in 1705 at Tranquebar under Danish protection. Throughout the Indian Empire the progress of Christianity between 1872 and 1901 has been remarkable. It has about doubled its numbers in thirty years, rising from an aggregate of one and a half to nearly three millions. Naturally Native Christians are most largely recruited from the classes outside the Hindu system. The missionary view lays stress on the labours of the early missionaries, the efficiency of the present body of workers, the dissemination of translations of the Scriptures, the improved status of Christians won by their own exertions, the spread of education, benevolence in seasons of famine, and lastly, the impartiality and disinterestedness of the British Government, which has conferred so many benefits upon the people, and is known to be influenced by Christian principles.

LESSON 9. POPULATION

General characteristics. There is probably no subject connected with India regarding which it is less easy to make statements of general application than that of its people. The area is great; the physical features and climate are highly diversified; and the population is derived from many different sources. And to racial differences must be added variations due to environment, which have been developed in the people during the course of the many centuries that have elapsed since their first settlement in India. In the north-west the dry climate, and the incessant struggles with man and nature in which only the fittest could survive, have com-

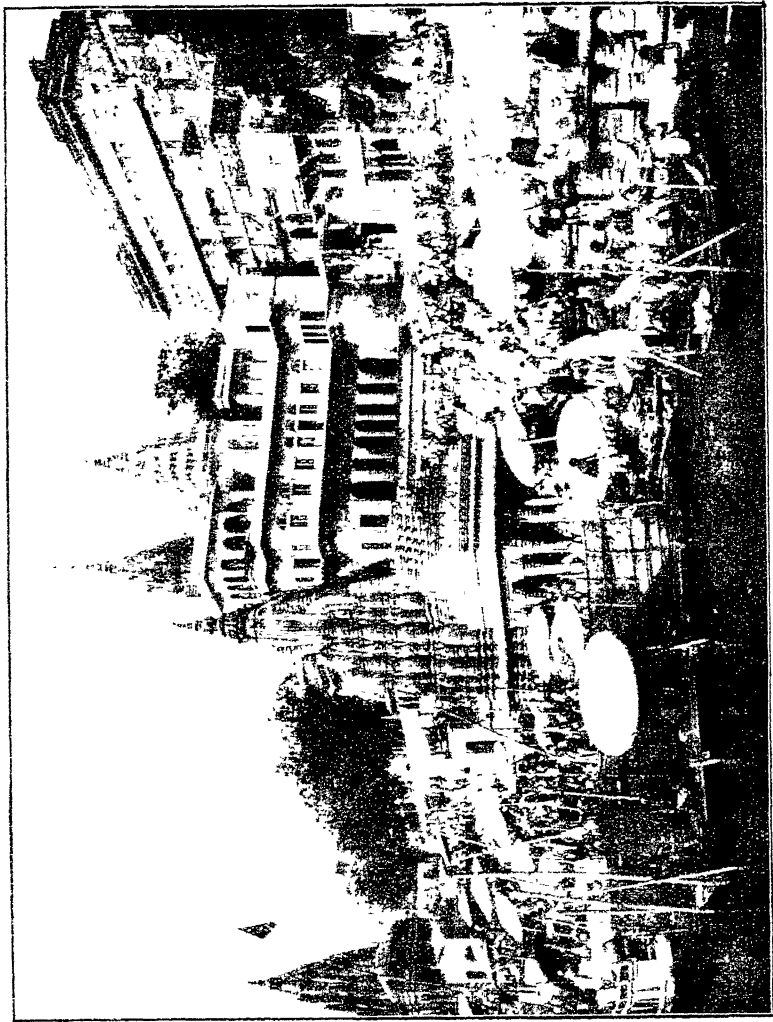
bined to produce a brave and hardy race of good physique; while the easy life in the steamy and fertile rice plains of the Gangetic delta, though encouraging a rapid increase in the number of its inhabitants, has sapped their energies and stunted their growth. The small, weak, and timid Hindu peasant of Bengal differs from the tall, sturdy, and brave Sikh, or the turbulent and active Pathān, to a greater degree than does the Scandinavian from the Spaniard or the Englishman from the Turk. The contrast is not less marked between the Gurkha and the Madrasi, between the Bhotiā of the Darjeeling hills and the Mundā or Oraon of Chotā Nāgpur, or between the Angāmi Nāgā and the Marāthā. The variations in type are often personal as well as local; and in some Provinces the higher castes may be regarded as being (with more or less intermixture of blood) the modern representatives of the Aryan and other dominant tribes who came to India in comparatively recent times, while the lower castes are composed in the main of the earlier inhabitants whom they subjugated. The Indian Muhammadans are mostly descendants of local converts; but they have received a certain infusion of foreign blood which, in Bengal at least, is often indicated by their sturdier frames, more prominent noses, and greater energy, as compared with their Hindu neighbours and congeners.

With these marked differences in physical type, there are equally noticeable divergences of social practices, dietary, and manner of living. At the same time, the people of India as a whole can be distinguished from those of Europe by certain broad characteristics. The native of India is, with a few marked exceptions, of slighter build and weaker frame than the European; his diet is, often from choice and often from necessity, wholly or mainly vegetarian; he is deficient in energy and in capacity for sustained hard labour; his earnings are much smaller, but his wants are simpler and more easily met—food grains are cheap, rents low, houses inexpensive, and clothing is often a matter of decency rather than of necessity. With the Hindus marriage is an obligatory religious sacrament, and is practically universal. With the Musalmāns, Animists, and Buddhists there is no religious sanction enjoining wedlock, but the practice is almost equally common; the age at marriage is, however, higher than in the

case of Hindus, and there is no bar on widow marriage, though it is often viewed with disfavour. This universality of marriage tends to produce a rapid increase of population. There are, however, well-marked positive checks; for the sanitary conditions prevailing in India are by no means favourable to longevity. The normal rate of mortality is very high, especially among young children. In years of drought it rises still higher, not so much on account of direct deaths from starvation, as through dysentery and diarrhoea due to the eating of improper food, general debility, and the epidemics of cholera so frequent in famine years.

Area and population. According to the revised areas adopted in the Census of 1901, the Indian Empire contains 1,766,597 square miles of country, and is therefore greater by 12,000 miles than the whole of Europe, excluding Russia. The Provinces under British administration comprise 1,087,204 square miles, or 61.5 per cent. of the whole; and the aggregate area of the Native States is 679,393 square miles, or 38.5 per cent. The population of the Empire as recorded on the night of March 1, 1901, was 294,361,056 persons, or about one-fifth of that of the whole world, of whom 231,899,507 were enumerated in British territory, and 62,461,549 in the Native States. [Allowing for certain transfers the real totals for Native States would now be, approximately—area, 765,000 square miles; population, sixty-four millions.] The latter, therefore, while containing more than one-third of the total area, support considerably less than a quarter of the population. In India as a whole the average density is 167 persons to the square mile, viz. 213 per square mile in British territory and 92 in Native States. There are, however, great local variations; and while the fertile and well-watered alluvial tract forming the Gangetic plain supports upwards of 400 inhabitants per square mile, the great desert in the west of Rājputāna has barely five.

Capacity to support a greater population. With the steady growth of population in a country which already contains one-fifth of the world's inhabitants, the question arises whether the time is not approaching when it will have more inhabitants than it can support; but an examination of the facts shows no cause for alarm at present. Apart from the non-agricultural forms of employment which, as we have seen,



BENARES—PALACE OF MAHARAJA OF INDORE.

Photograph Co.

are rapidly growing in importance, it seems certain that, even in the most crowded tracts, more scientific farming would greatly increase the present produce of the soil. There are, besides, many parts, e.g. Burma, where, even under present conditions, ample scope remains for expansion; and many others, such as Western Rājputāna, where, with the aid of irrigation, crops might be grown on what is now a sandy desert. Overcrowding, moreover, is a purely relative term, and the densely inhabited Districts of Eastern Bengal form one of the most progressive and prosperous tracts in the Empire. In India, as a whole, the greatest growth of population since 1891 has occurred in Districts which in that year had already a density of from 500 to 600 persons per square mile.

Religion. Of the total population of India, 70 per cent. were returned at the Census of 1901 as Hindus, 21 per cent. as Muhammadans, 3 per cent. as Buddhists, 3 per cent. as Animists, and 1 per cent. as Christians, the balance being made up of Sikhs, Jains, Pārsīs, Jews, and others.

Hindus. Hinduism, with its 207 million votaries, is *the* religion of India. It is professed in one or other of its multifarious forms by seven persons out of every ten. The number of persons returned as Hindus in 1901 was less by half a million than it was ten years previously, and the proportion borne by them to the total population has also declined. This is due mainly to the circumstance that, generally speaking, the tracts where Hindus preponderate were those that suffered most from famine, but there are also other causes at work. The gains from the ranks of the Animists are probably exceeded by the losses on account of conversions to Muhammadanism and Christianity; and the social customs of the Hindus, especially the prevalence of infant marriage and the prohibition of the remarriage of widows, tend to diminish their reproductive capacity as compared with the adherents of other creeds.

Animists. According to the census returns, the total number of Animists in India slightly exceeds $8\frac{1}{2}$ millions. Animism may be defined roughly as the belief that man is surrounded by a multitude of vaguely conceived spirits or powers, some of which reside in rocks and streams and other natural objects, while others preside over disease, and others,

again, have no special function or habitation. They are for the most part malignant, and require to be propitiated by offerings and ceremonies in which magic plays an important part.

Buddhists, Sikhs, Jains, &c. Of the other indigenous religions the most important numerically is Buddhism, with about $9\frac{1}{2}$ million followers, of whom all but a very small minority are found in Burma or on its confines. The Sikhs, who slightly exceed two millions, are practically confined to the Punjab, while the Jains, with $1\frac{1}{2}$ millions, have their headquarters in Rājputāna and Gujarāt. Hindu sects form a vast array; two monotheistic sects of recent origin may be mentioned—the Brahmo Samāj and the Arya Samāj.

Musal māns. The total number of Muhammadans is $62\frac{1}{2}$ millions, or rather more than a fifth of the total population. It is easy to understand why Muhammadans should be found in large numbers in the Punjab and Sind, which lie on or near the route by which successive hordes of Afghān and Mughal invaders entered India; but it is not at first sight apparent why they should be even more numerous in Bengal proper. The reason is that in the east and north of this tract, where the Muhammadans are most numerous, the bulk of the inhabitants had not been fully Hinduized at the time of the Muhammadan conquest, and were thus more easily brought under the influence of Islām. The increase in the number of Muhammadans in India between 1891 and 1901 was nearly 9 per cent., or about four times that of the population at large. The tracts where they are mainly found escaped the stress of famine. Their girls are given in wedlock at a later age, and their widows are allowed to remarry; their dietary is more nourishing; and their female children are taken better care of than is often the case with the Hindus. The loss by conversion to other religions is insignificant; and there is a steady, though small, gain by accessions from the ranks of Hinduism.

Christians. The Christian community numbers 2,923,241, of whom 2,664,313 are natives and the remainder Europeans or Eurasians. Nearly two-thirds of the total number of Native Christians are found in the Madras Presidency and its dependent States. As might be expected, the growth of Christianity is far more rapid than that of the general popula-

tion. From 1872 to 1901 the Native Christian community has increased by 114 per cent.

Europeans and Eurasians. The number of Europeans is returned as 169,677, compared with 168,158 in 1891, and that of Eurasians as 89,251, compared with 80,044. More than one-third of the persons returned as Europeans were born in India. By nationality ten Europeans in every eleven are British subjects; most of those owing allegiance to other flags are missionaries or members of foreign trading firms.

Education. At the Census of 1901 the population was divided into two broad categories—the literate, or those who could both read and write, and the illiterate who could not do so. Even in this limited sense of the word only 53 per thousand were returned as literate, viz. one male in 10, and one female in 144, but it seems probable that the true proportions are somewhat higher. Of the larger British Provinces Burma easily holds the first place. Madras stands next to Burma, with scarcely a third of its proportion of literate persons; then follow Bombay and Bengal; and then, at a considerable distance, Assam, the Punjab, the United Provinces, and the Central Provinces. The Native States taken as a whole have only 79 males and 6 females who are literate per thousand of each sex; but Cochin, Travancore, and Baroda occupy a higher position than any British Province except Burma.

The proportion of literate persons is highest along the sea-coast, and gradually diminishes as one proceeds inland. There are more persons able to read and write among those who speak Dravidian and Mongolian languages than among those whose vernaculars belong to the Aryan family. Of the religious communities the Parsis stand first, with two-thirds of their total able to read and write. Then come the Jains with 25, and the Buddhists with 22 per cent., while the Christians follow close on the Buddhists. A long gap ensues, and then come the Sikhs (6 per cent.) and Hindus (5 per cent.); then the Muhammadans with 3; and last of all the Animists, with less than $\frac{1}{2}$ per cent. The knowledge of the English language is most widespread in Madras, Bombay, and Bengal. The Native States generally are backward, but this is not the case in Cochin, Travancore, and Mysore.

LESSON 10

PUBLIC HEALTH AND VITAL STATISTICS

Three main classes of fatal disease. The ordinary causes of sickness and mortality may be said to fall mainly into three great classes. First, the specific fevers, including malaria, small-pox, influenza, Malta fever, cerebro-spinal meningitis, typhus, and doubtless others that await differentiation. Second, those affecting the abdominal organs: notably cholera and enteric fevers, dysentery and diarrhoea. Lastly, the lung diseases—tubercle, pneumonia, bronchitis, &c.; the first two being specific infections, and all frequently the *sequelae* of fevers and bowel complaints. Another fact of great significance is the wide prevalence of intestinal and skin parasites, and of ulcers and other indications of scurvy. Thus, an overwhelming proportion of the sickness and mortality is due to diseases of which the salient property is communicability; and, at the same time, there is the evidence of deficient powers of resistance, and of insanitary habits and surroundings, viz. aggregation, foul air, deficient and impure water, and defective conservancy, including drainage. Each of the three groups of diseases can be causally associated with one or more of these defects.

Sickness. It may be assumed that there are probably three cases of sickness for every death, and at this rate the number constantly sick among the 232 millions of British India would amount to nearly 28 millions. This sickness falls heavily upon the adult population, and is generally of a nature that confers no immunity, but—especially in the case of malaria, dysentery and diarrhoea, and lung diseases—rather increases the liability to subsequent attacks. Where it does not temporarily prostrate, as is not infrequently the case, it often involves a lower rate of wages for labourers, and everywhere depresses the moral and physical character, and so forms a potent source of poverty. This view is enforced by the contrast between India and England in respect to the duration of life: between 15 and 35 years of age the probabilities are from 36 to 38 per cent. for males, and from 34 to 48 per cent. for females, less favourable in India; the difference at birth amounts to 79 and 85 per cent., respectively.

Hindu and Muhammadan mortality. Taking the figures for Hindus and Muhammadans under similar conditions, we find that the death-rates are, as a rule, in favour of the latter. This is the more notable as the Musalmāns, as a body, are often included in the poorer sections of the community; they are frequently proselytes from the lower caste Hindus; and in the United Provinces they congregate more largely in the towns. Nevertheless, for the period 1891-1900 the mean death-rate of Muhammadans was lower than that of Hindus in the Punjab, the United Provinces, Madras, Bombay, and Lower Burma, and in Bengal during 1891-6. In the native army, during the five years 1895-9, the mean death-rate of Hindus (all classes) was 8.8 per thousand, while that of Muhammadans was only 3.6. Again, the available records of the mortality from plague, while subject to many qualifications, afford testimony to the greater power of resistance which Musalmāns enjoy. Lastly, the death-rate among Eurasians and Native Christians (though race cannot be invoked in the latter case) is almost everywhere invariably lower than that of the general native population. It is probable that the nature and variety of the food play a considerable part in the production of these results.

PART II. HISTORICAL

LESSON 11. EPIGRAPHY

Scope of the subject. The subject of this contribution to the Imperial Gazetteer is the explanation of the nature and value of the epigraphic or inscriptional bases of Indian research for the pre-Musalmān period. And the topic is an important one; for, not only is India particularly rich in inscriptional remains, but also those remains are the only sure grounds of historical results in every line of research connected with its ancient past. We have, however, to exclude from our treatment of this subject one branch which has always been found more generally attractive than any of the others. The inscriptions on coins and gems, better termed, by way of avoiding confusion, 'legends' on coins and gems, are epigraphic materials. But they are a special class of such materials; and the treatment of them falls, most properly, under the subdivision of numismatology. We have to confine our attention here to those epigraphic remains which have come to be best known as 'inscriptions' by way of distinction from the numismatic materials. Nevertheless, we hope to be able to show that our topic is no dry and dull one, but is full of interest as well as importance.

The nature of the inscriptions. The inscriptions, thus indicated as our topic, are notifications, very frequently of an official character, and generally more or less of a public nature, which recite facts, simple or complex, with or without dates, and were intended to be lasting records of the matters to which they refer. They are in almost all cases found engraved, not written. They were occasionally engraved upon monuments in the shape of great monolithic columns; as, for instance, in the case of some of the moral and religious edicts of Asoka, and the panegyric on the two columns of victory at Mandasōr, in Mālwa, which recites the conquests of King Yāsōdharman. Mostly, however, they are found engraved on metal plates, on

stone tablets, on rocks, on walls and pillars and other parts of caves or of temples and other buildings, on pedestals of images and statues, and on relic-caskets. But they are occasionally found painted, and in a few instances written with ink. And some are found stamped on clay and bricks.

For the purposes that we have in view, the inscriptions include, with the exception of the legends on coins and gems, everything inscriptive, written, painted, stamped or engraved, public or private, lengthy or brief, that can be turned to account in connexion with the ancient past of India, in respect of the political history, the religious development, or any other line of research. Even the mere records of pilgrims' visits are of value, in establishing the antiquity of the sacred places visited by them, and of the towns from which they came. Even descriptive labels, incised as accompaniments to statues and sculptures, are valuable in marking the ancient times to which traditions and legends and mythological notions may be carried back. Even a name stamped on a brick has been found of use in determining the period to which a building may be referred. And even masons' marks, in the form of alphabetical characters, have played an important part in the inquiry into the history of writing in India. Such are the remains with which we are to deal, and of which we shall speak either as 'inscriptions', or as 'epigraphic records', or simply as 'records', according to the convenience of the moment.

The value of the inscriptions. Rich as have been their bequests to us in other lines, the Hindus have not transmitted to us any historical works which can be accepted as reliable for any early times. And it is almost entirely from a patient examination of the inscriptions, the start in which was made more than a century ago, that our knowledge of the ancient political history of India has been derived. But we are also ultimately dependent on the inscriptions in every other line of Indian research. Hardly any definite dates and identifications can be established except from them. And they regulate everything that we can learn from tradition, literature, coins, art, architecture, or any other source.

Hindu literature. With the exception of the historical chapters of the Purāṇas and the Rājatarāṅgiṇī, the ancient Hindus seem to have never made any real attempt to deal



LOMAS RISHI CAVE, BARĀBAR HILLS, GAYĀ.

with history on general lines. They have left us to gather what we can from their ordinary literary works, into which they have occasionally introduced historical matter, but, as can clearly be seen, only as an incidental detail of quite secondary and subordinate importance.

In the body of their literature, the Hindus do not help us much. The plots of some of the plays, the classical poems, and the collections of imaginative stories, were woven round historic names, both of persons and of places. But it is seldom, except in the geographical line, that such allusions can be put to any practical use. They help us to locate places, and to fix the limits of countries. And they help us to establish the antiquity of places. In the historical line, however, the allusions teach us little, if anything. The works do not give dates for what is told in them: and naturally enough: the similar productions of other countries, also, do not aim at being historical records, and at including chronological details. The works in question are of use, historically, only when the date of an author happens to be known, and we are enabled thereby to fix a latest possible limit for an historic name, mentioned by him, for which we have otherwise no specific date at all. There are, indeed, a few compositions which put forward certain distinct historical pretensions, but which cannot, in truth, be taken as anything more serious than historical romances. In Sanskrit we have in prose the *Harshacharita* of Bāṇa, and in verse the *Vikramāṅkadēvacharita* of Bilhaṇa. In the same category we must place certain Tamil historical poems.

These works, the dramas, the classical poems, the imaginative stories, and the historical romances, and so also the Buddhist writings both Sanskrit and Pāli, are invaluable for the study of manners and customs, trade and commerce, methods and routes of communication, geographical hints, and the details of domestic, social, public and religious life. And they supplement the epigraphic records admirably. But that is all they do. And, even in respect of the results which we do obtain from such sources, we must always remember that the ancient Hindu writers were not archaeologists, and that, consequently, the results are liable to be for the times in which the writers wrote rather than for the times to which their works refer.

The great number of the inscriptions. It must be added that neither are the epigraphic records at all few in number, nor are they confined to any limited divisions of the country. The inscriptions of India itself come from all parts: from Shāhbāzgarhī in the north, in the Yūsufzai subdivision of the Peshawar District, to the ancient Pāṇḍya territory in the extreme south of the Peninsula; and from Assam in the east to Kāthiāwār in the west.

And there are also others, from beyond the confines of India, of which we must take account in our Indian researches. We have important records in the Indian mixed dialect, neither exactly Sanskrit nor exactly Prākṛit, from Afghānistān, and others, in Sanskrit, from Nepāl; these are so intimately connected with India that they are always classed and treated amongst the Indian records. We have records as well as manuscripts from Central Asia, in some dialect of the mixed class, and not only in the Khaṭōshthī characters, which, though used in the north-west of India, were not, we have now learnt, confined to that territory, but also in the Indian Brāhmī characters; the exploitation of this source of information has recently begun. From over the sea, we have Sanskrit, Pāli, and Singhalese records from Ceylon, useful to us in the historical line as well as in the palaeographic and linguistic departments; the systematic examination and publication of these has now commenced. From Further India, we have Sanskrit records from Cambodia in Indo-China, ranging onwards from A.D. 604. Records in Sanskrit come even from Java. And we are beginning to obtain valuable records in Burma.

Further, the numbers of the records in India itself are very great. For India as a whole, a detailed list of the earlier inscriptions, anterior to about A.D. 400, is, it is understood, in course of preparation: the already known inscriptions of that period number altogether, large and small, between 1,100 and 1,200; and, when once that list has been published, we shall be in a position to appreciate them far better than has ever yet been done. For Northern India, that is to say, chiefly for the territory lying to the north of the Narbadā and Mahānadi rivers, and for the period from about A.D. 400 onwards, Professor Kielhorn has given us a list, with dates, names, and some other leading details, of more than 700 inscriptions already known. And for Southern India, the same scholar has

given us a similar list of no fewer than 1,090 inscriptions, ranging onwards from about A.D. 500, the contents of which have already been sufficiently made known to be available for treatment in that way. And whereas new records are every year being freely obtained in Northern India, it is known that in Southern India there is a wealth of materials the extent of which can hardly yet be gauged.

The precise dating of the inscriptions. Further, we are not in any way left to grope our way blindly in the arrangement of this vast mass of materials. We have a definite guide in the fact that, from the first century B.C., the epigraphic records are for the most part specifically dated: some in the regnal years of well-known kings; others in the astronomical Kaliyuga reckoning, the initial point of which was placed in 3,102 B.C.; and the large majority in the various historical eras, commencing with the so-called Vikrama era founded by Kanishka in 58 B.C. And with the specification of the year there are usually given details of the month, the day, &c., which sometimes enable us to state even to an hour the exact occasion of the framing of any particular record.

Caution in the use of the inscriptions. For the most part the exploration of the inscriptions, and the collation of results from them, require nothing but intelligence and patience, coupled with a certain amount of experience. But there is one class of them which must be used with only the greatest caution, if at all.

Just as there are in India numismatic and even literary forgeries, so also there are spurious, counterfeit, or forged records, as well as genuine ones. Some of these spurious records have imposed on us in the past. From accepting them, as well as from giving too ready a credence to the pseudo-historical legends which exist in abundance in so many parts of the country, and to the fantastic archives and Vamsāvalis, or successions of kings, of Orissa, and to similar documents obtained elsewhere, and to imaginative chronicles, much erroneous matter has been introduced into the history of India. And, in trying to prevent the introduction of any more such matter into it hereafter, as well as in eliminating the fables that have already been imported into it, we have to be specially on our guard against such materials as falsely purport to be ancient official records or vouchers issued by

official authority. And there are certain other records which also must only be used with discrimination. Some of these are, by their own admission, reproductions of original records; and we have to consider how far the originals may have been reproduced correctly, or may have been unintentionally perverted. Others of them, while not admitting that they are reproductions, plainly are such, or are reasonably suspected to be such. And there are also genuine records which have been tampered with, in order to make them serve purposes other than those originally intended by them.

Tradition. We have mentioned tradition, as preserved in literary works, as one of our sources of information; but with the reservation that, along with what we gather from coins, it must be applied with extreme care and discrimination. We may fairly use tradition to help us to interpret obscure expressions in the inscriptions, and in a general way to explain the meaning and the bearing of those records. We may even use it to fill up gaps in the history deduced from the inscriptions, when nothing incongruous or improbable is suggested by it; especially when it receives, in respect of immediate surroundings, any specific corroboration from the inscriptions. But, when we can gather plain facts from the epigraphic records and arrange them on the bases of those records, we are independent of tradition, and can then recognize it only with a view to gauging its value in the light of what we learn from the only definite source of information. And we must not, in any circumstances, twist the assertions of tradition. We must not start by conjecturally correcting its statements, just as fancy may dictate, in order to make them support that which we seek to prove. We must not, as a basis for our application of it, make it say what it does not say. We may correct it only when we have undeniable evidence that it is open to correction, and an unmistakable guide as to the direction in which it may be corrected. And we must take care that whatever tradition we do use shall be ancient.

In short, it cannot be too steadily borne in mind that, while we may most suitably take tradition as a subsidiary source of history, we must weigh it carefully before we use it. It can in no way take the place of the epigraphic records. It is of no value against any plain and unmistakable assertions made by them.

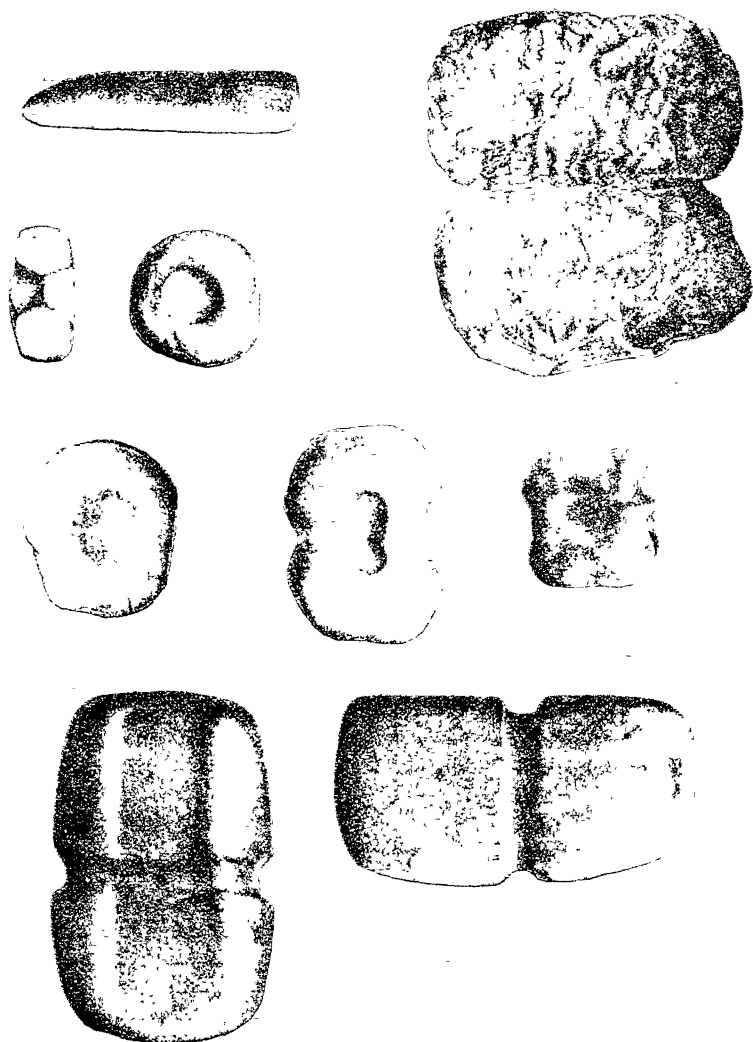
LESSON 12. PREHISTORIC ANTIQUITIES

Stages of early civilization. Knowledge of the condition of mankind in the dim ages of the past which lie beyond the ken of history or tradition is attainable only by scientific interpretation of the scanty material relics of human workmanship—the tools, weapons, tombs, and pottery—which survive from these remote times. Archaeologists are agreed that the successive stages of nascent civilization in the prehistoric world are best distinguished by noting the degree of progress in the metallurgic arts.

The period during which iron was, as it now is, in familiar use is known as the Iron Age. The next preceding period, when implements now commonly made of iron were made of bronze, is called the Bronze Age. The still earlier period, when men knew not the use of metals, but were compelled to rely for all purposes of war, the chase, and domestic industry upon rude instruments of wood, bone, or stone, is designated the Stone Age.

In many countries two subdivisions of the Stone Age are clearly to be distinguished. The earlier, termed the Palaeolithic or Old Stone Age, is characterized by chipped stone implements, rude in form, and frequently associated with the remains of extinct animals. The later, termed the Neolithic or New Stone Age, is characterized by the prevalence of a higher type of implements, commonly ground or polished, and associated with remains of the fauna now existing. The palaeolithic men were ignorant of the potter's art and built no sepulchres. During the neolithic period, pottery, at first hand-made, and afterwards turned on the wheel, was in constant use, and the dead were honoured by elaborate tombs, frequently built of massive stones.

By imperceptible gradations the Neolithic passes into the Bronze, and the Bronze into the Iron Age, but between the Palaeolithic and the Neolithic Ages a great gulf seems to be fixed. Most parts of Europe, Western Asia, and Egypt certainly passed in prehistoric times through all these four ages, or stages of civilization; but the course of evolution has often been less regular, and many examples of abrupt transi-



STONE IMPLEMENTS FOUND IN THE NORTH-WEST PROVINCE.

tion from the Stone Age to the Iron Age might be cited. In India generally the Bronze Age is missing, and the transition from polished stone to iron was effected directly, but in some parts of the country tools and weapons were made of pure copper before iron came into ordinary use.

Palaeolithic remains. All that is known at present about palaeolithic man in India may be summed up in the brief statement that rude stone implements found in laterite beds and ossiferous gravels south of parallel 25° of north latitude reveal the existence of a race of men contemporary with animals now extinct. Even the skulls and skeletons of these men, who made no pottery and built no tombs, have disappeared. The geological problems connected with the implement-bearing beds of India require investigation much fuller than that which they have yet received.

Neolithic implements. Implements of the neolithic period abound in India. They have been observed in the Peninsula from the extreme south to parallel 18° of N. latitude; and all along the southern border of the Gangetic Valley in the Vindhyan and other ranges which separate the plains of Northern India from the Deccan the soil 'teems' with them. In Bengal and the Punjab stone implements seem to be rare. The hills at Rohri on the Indus in Sind yield copious supplies of singularly large and perfect flakes of nummulitic flint, as well as of the cores from which the flakes were struck. The Rohri implements, of which many specimens may be seen in English museums, are probably of neolithic age. Examples of neolithic implements have been found at a few sites in the Gangetic alluvium, as well as among the hills and deserts of Rājputāna, and probably exist in every Indian Province.

Tombs. In prehistoric, as in modern India, various methods for the disposal of the dead were adopted. The men of palaeolithic times probably abandoned their dead in the forests, as the Oritae of Gedrosia (Makrān) continued to do in the days of Alexander the Great. In the Neolithic Age burial was perhaps the rule, and it seems certain that the practice of burial is older than that of cremation.

Examples of sepulchres which can be referred with confidence to the neolithic period are rare in India, where most of the megalithic tombs belong to the Iron Age. Megalithic tombs in great variety of form abound throughout Madras,



COPPER IMPLEMENTS FOUND IN BLINOR DISTRICT.

Bombay, Mysore, and the Nizām's dominions. They generally contain iron implements, and are evidently of very various ages, some being truly prehistoric and of remote antiquity, while others may be described as modern. The human remains found in the megalithic tombs have been sometimes buried, but, perhaps, more frequently cremated. Occasionally, a single sepulchre contains traces of cremation as well as of burial.

Copper implements. India, as already observed, had no Bronze Age; that is to say, weapons and tools now made of iron or steel were very rarely made of bronze. That material was ordinarily employed only for vases, lamps, and other ornamental purposes, and did not come into common use until long after iron was familiar. But there are clear indications that in a considerable portion of Northern India tools and weapons made of practically pure copper were in use for a time, and the facts fully warrant the assumption that a Copper Age intervened between the Neolithic and Iron Ages.

'The most important discovery', observes Sir John Evans, 'of instruments of copper as yet recorded in the Old World is that which was made in Gungeria in Central India' in 1870. The treasure consisted of 424 copper implements, weighing 829 lb., and 102 thin silver plates, weighing 6 lb. Notwithstanding the presence of silver in this unique hoard, the probability is that a remote date must be assigned to both the copper tools and the silver ornaments. Silver, although perhaps unknown in the South before 600 or 700 B. C., may have been introduced into the North by land routes at a much earlier period. So far as is known, the metal was never produced in considerable quantity from Indian mines; it has always been an important item in the list of imports. Copper, on the other hand, is widely diffused in India, and the sites of ancient mines are known. The reddish *ayas* of the Veda cannot have been either iron or bronze, and must have been copper. The copper implements of the Gungeria hoard, and the fine celts, swords, and spear-heads of the same material, found from time to time in the Cawnpore, Fatehgarh, Mainpuri, and Muttra Districts in the Gangetic Valley, were probably made of Indian copper.

Iron. The approximate date of the introduction of a know-

ledge of iron into India cannot at present be determined. This metal, which was in common use in Egypt in the seventh century B. C., does not appear there much before 800 B. C. This latter date may be the anterior limit for the appearance of iron in Southern India, which was in communication with Egypt from very early times, while still severed from Northern India by an almost impassable barrier of mountain and forest. But in Babylonia iron was known from remote antiquity, and it is possible that the people of Northern India may have been familiar with the metal long before it became common in the isolated South. At the time of Alexander's invasion (326 B. C.) the armed nations of Northern India were far superior in the art of war to the other nations of Asia, and were as well versed in the use of iron and steel as the Greeks themselves. Quintus Curtius mentions that the chiefs of the Punjab presented Alexander with 100 talents of steel (*ferrum candidum*). The Greek accounts of Indian civilization as a whole imply that the nations of the Punjab and Sind in the fourth century B. C. had long emerged from the conditions involved in the use of stone or copper tools and weapons. The Iron Age in Northern India may well go back to 1500 or even 2000 B. C.

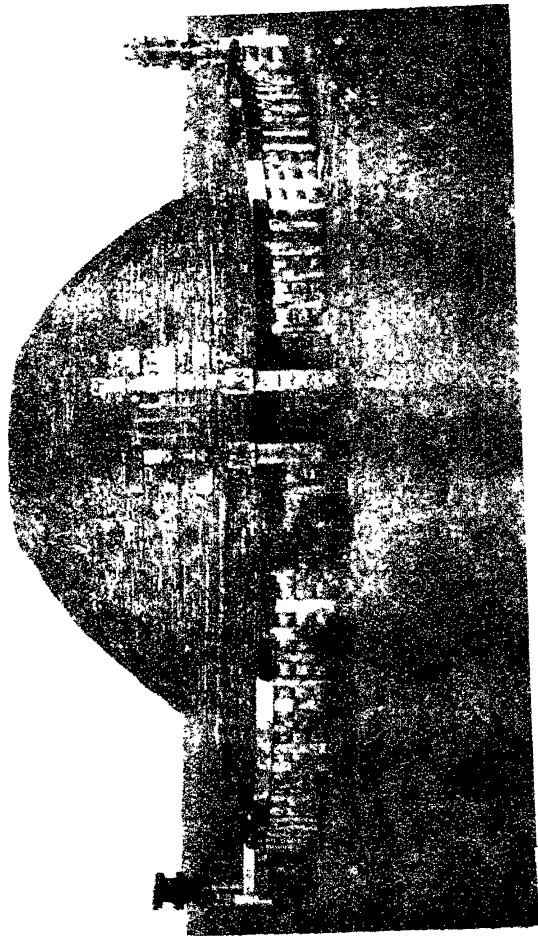
LESSON 13. ARCHAEOLOGY OF THE HISTORICAL PERIOD

The earliest Indian building. The earliest Indian building to which an approximate date can be assigned is the *stūpa* at Piprahwa on the Nepāl frontier, explored in 1898. Very strong reasons exist for assigning this building to 450 B. C. in round numbers, shortly after the decease of Gautama Sākya-muni, commonly known as Buddha. The construction and contents offer valuable testimony concerning the state of civilization in Northern India about 450 B. C., which is quite in accordance with that elicited from early literary sources. Even in the much more ancient Vedic age the civilization of the North-Western Indians was so far advanced that Professor Wilson could describe it as 'differing little, if at all, from that in which they were found by the Greeks at Alexander's invasion' (326 B. C.). We need not, therefore, feel

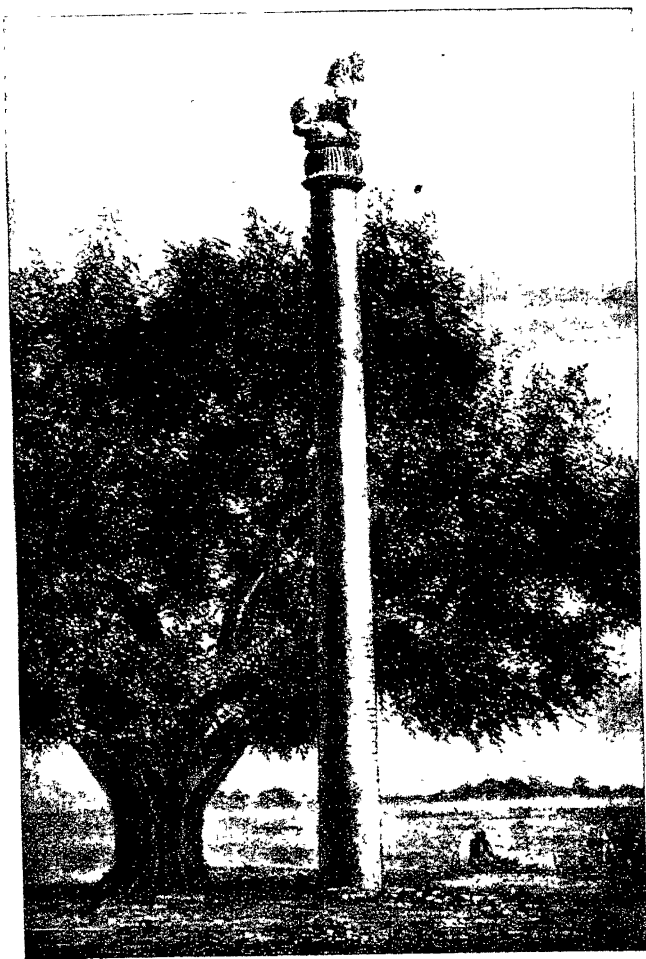
surprised when the Piprahwa *stūpa* gives us definite information that the Indians on the frontier of Nepāl in 450 B. c. included skilled masons, accomplished stonecutters, and dainty jewellers. The masonry of the *stūpa* is excellent of its kind, well and truly laid; the great sandstone coffer could not be better made; and the ornaments of gold, silver, coral, crystal, and precious stones which were deposited in honour of the holy relics, display a high degree of skill in the arts of the lapidary and goldsmith. The brief inscription on one of the vases in the coffer is of inestimable value as fixing an approximate date in the history of the development of Indian writing, and as a tangible refutation of the theories once fashionable which would not allow a knowledge of writing even to the Indians of the fourth century B. c.

Early Period of Indian art, 250 B. c. to A. D. 50. In our present state of ignorance a great gap, to which no material remains can be assigned, exists between the date of the Piprahwa *stūpa* and that of Asoka Maurya, two centuries later. In fact, the history of Indian art may be said to begin in the reign of Asoka (272-231 B. c.), and all the known remains assignable to his period are probably later than 260 B. c. These are sufficiently numerous and well preserved to give a good notion of the state of the arts during the reign of the great Maurya emperor. The Maurya style, subject, of course, to considerable modification owing to the lapse of ages and the variety of local fashions, lasted for several centuries, and the early period of Indian plastic art may be described with a close approximation to accuracy as extending from 250 B. c. to A. D. 50. Most of the remains date from the second and third centuries B. c.

Remains of Early Period. The ruins of the buildings of this period are almost without exception associated with the Buddhist religion. The best preserved are the numerous *stūpas* and connected buildings at Sānchī in the State of Bhopāl, Central India. The buildings at Bharhut (more accurately, Barhut) in the state of Nāgod, Central India, have been destroyed, but the sculptures rescued from that locality are of great value and interest. The ruins at the ancient imperial capital, Pātaliputra (Patna), and at the Mahābodhi temple, commonly called Buddha Gayā, although fragmentary, are important. The ancient city of Mathurā



THE GREAT STŪPA, SĀNCĪ, AS RESTORED.



ASOKA'S PILLAR AT LAURIYĀ-NANDANGARA, IN TIRHUT.

(Muttra), on the Jumna, and some of the oldest cave-temples in Western India, contribute examples of sculpture, while the numerous monolithic pillars erected by Asoka in the home provinces of his empire afford valuable evidence of the state of the arts in his time.

Hellenistic and Persian influence. Although the details of real life in the sculptures of the early period are invariably purely Indian, the compositions as a whole, and the representations of mythical monsters, are probably Hellenistic, and exhibit the distinctive characteristics of Hellenistic art. The practice of decorating buildings with 'pictures in relief' might well have been borrowed from Persia; but the composition and style of the Indian work are so remote from the Persian, and so akin to the Alexandrian, that the Indian artists seem to have imitated European rather than Iranian models. The Alexandrian school loved reliefs essentially similar to those of Sāñchī and Bharhut. The drawing and execution of the Indian 'pictures in relief' are, of course, much inferior to the Greek, but the general principles of the composition in both are identical. The obviously pictorial character of the Indian sculptures is probably due to direct imitation of the Hellenistic sculptures based on painted models, rather than to the existence of a lost school of Indian painting.

The intimate commercial and diplomatic intercourse which undoubtedly existed between the Maurya empire of India and the Hellenistic kingdoms of Asia, Africa, and Europe permits of no difficulty in understanding how the artistic conceptions of the West reached India. During the Maurya period (321-180 B. C.), and for some centuries later, active intercourse by both sea and land was maintained between East and West, and endless opportunities existed for the importation of European art motives. The Hellenistic is not the only foreign element in ancient Indian art. The influence of Persia is apparent, and the columnar architecture of the Achaemenian monarchy supplied the models for Asoka's monolithic pillars and many architectural and sculptural details. The capitals of Asoka's pillars present a curious combination of Hellenistic and Persian elements. The style of the most ancient Indian works of art in stone being a compound of Hellenistic, Persian, and Indian elements, any descriptive name would be inconveniently cumbrous; and it is better to designate the first

school of Indian sculpture, extending from about 250 B. C. to A. D. 50, by a simple chronological appellation and to call it the Early School.

The Second or Kushān Period. The Second (and best) Period of Indian plastic art may be regarded as extending over a space of about three centuries, from A. D. 50 to 350. With reference to the principal dynasty of the time in Northern India, it may also be designated as the Kushān Period.

Influence of Roman taste. During the three centuries referred to, and especially up to the date of the destruction of Palmyra in A. D. 272, the Indian kingdoms were in active commercial, and occasional diplomatic, relations with the Roman empire, which, in the time of Hadrian (A. D. 117-38), perhaps touched the boundary of the Kushān dominion. Hellenistic art at this period assumed a cosmopolitan aspect under the uniform pressure of the Roman rule and taste. We find consequently that Indian Buddhist sculptures in the Punjab are often hardly distinguishable from contemporary pagan works at Palmyra and Christian works in the catacombs. The Corinthian capital, which in various florid forms was so fashionable in the Roman empire, was freely imitated as a decoration by the masons and the sculptors of the Punjab, who did not hesitate to mix up Graeco-Roman with Persian forms. The artists simply followed the taste of the day, whether they were working on commissions given by Buddhists, Pagans, or Christians. The way in which Indian sculptors of the Kushān period adopted Graeco-Roman fashions and mixed them up with the familiar Persian forms may be compared with the modern practice of mingling European and Asiatic designs without much regard to congruity. India has always been eclectic in art matters, and most of the designs now known as Indian are really of foreign origin.

Two principal schools of sculpture. The principal examples of the sculpture of the Kushān period fall into two local schools, those of Gandhāra and Amarāvati. The Yūsufzai country north of Peshāwar, with some neighbouring territories, constituted the ancient province of Gandhāra. The Indo-Graeco-Roman sculptures, often designated as Graeco-Buddhist, are found chiefly in that province, and are



BODHISATTVA, LAHORE MUSEUM (GANDHĀRA SCULPTURE)

best designated by its name. The Amarāvati school is practically confined to a single locality, on the Kistna river, south of the Vindhya mountains. Some interesting sculptures of the period also occur at Mathurā on the Jumna, and Dr. Stein has recently discovered the traces of a branch of the Gandhāra school in distant Khotan in Chinese Turkistān.

The Gandhāra sculptures. No Indian sculptures have excited interest in Europe at all comparable with that aroused by the extremely numerous works of the Gandhāra school, found at Buddhist sites in the Yūsufzai country north of Peshāwar, and in the neighbouring valleys of the Kābul and Swāt rivers. The multitude of these works is astonishing. Hundreds are deposited in the galleries at Calcutta, Lahore, Woking, Lucknow, the British Museum, and South Kensington. Many more are to be found in minor collections, and thousands must still remain on the numerous sites of Buddhist establishments.

The Gandhāra sculptures consist for the most part of works in high relief executed in clay slate, for the decoration of Buddhist monasteries and their appurtenant buildings. Statues in the round also occur, and plaster heads are numerous. Taken as a whole, the work of the school is probably equal in merit to much of the contemporary sculpture in the provinces of the Roman empire.

Decline of the art of sculpture. After A. D. 300 Indian sculpture changes its character. The Greek tradition disappears, and the style becomes almost purely Hindu. During the Gupta period, in the fifth and sixth centuries, some admirable work was produced, but in later times the figures both of men and animals too often become stiff and formal, perception of the facts of nature almost disappears, and the idea of power is clumsily expressed by the multiplication of members. The many-headed, many-armed gods and goddesses whose images crowd the walls and roofs of mediaeval temples rarely have any pretensions to beauty, and are frequently hideous and grotesque. The dignity of the architectural design is, on the contrary, often imposing beyond dispute; and the sculpture is so varied, laborious, and multitudinous that the spectator, however much he may criticize its obvious deficiencies, is impressed with a feeling of wonder, and even of admiration. Throughout the ages the Hindu

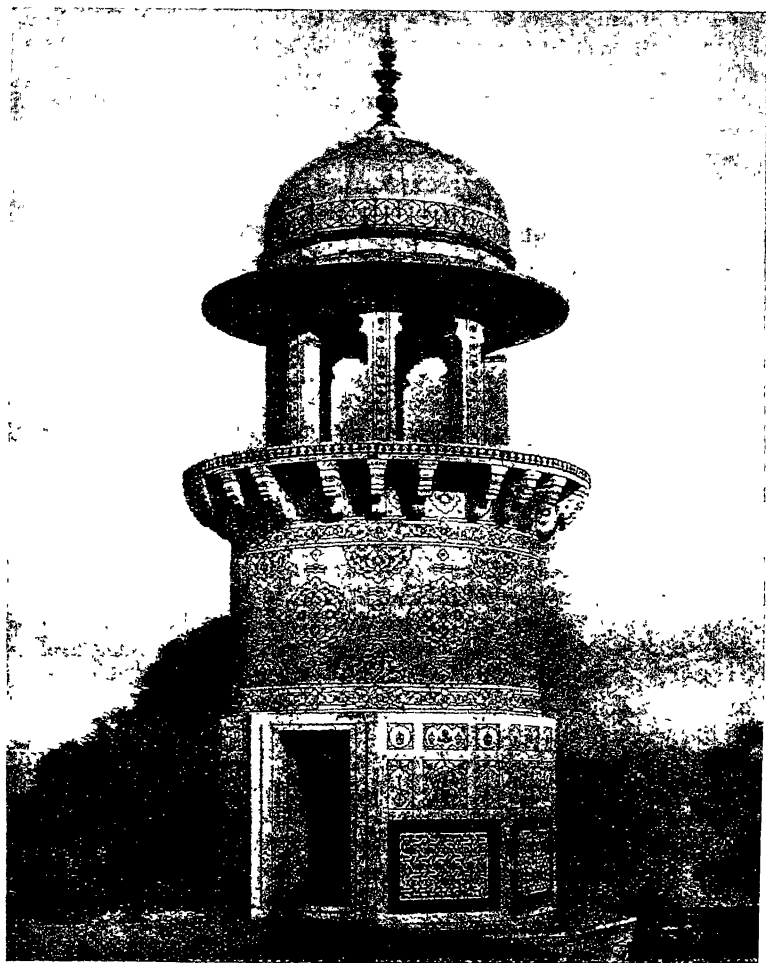
maisons have retained the faculty of producing in extraordinary variety decorative patterns of infinite complexity, executed with consummate mechanical skill. The great mediaeval buildings, indeed, seem to have been designed mainly for the exhibition of unrestrained ornament, lavished on every available surface in such inordinate quantity that it often wearies the eye and partially defeats its purpose.

Religion and sculpture. The artistic remains of ancient India up to the beginning of the fourth century are mainly Buddhist. Under the Gupta dynasty (A. D. 320-480), a great revival of Brāhmanical Hinduism took place and Buddhist worship slowly decayed. But Buddhism was not as a rule violently extirpated; it continued to flourish in Bihār, the ancient Magadha, under the rule of the sympathetic Pāl kings, until the Muhammadan conquest at the end of the twelfth century, and traces of its survival are found in many other parts of the country up to as late a time. The mercantile and trading classes, who formed the great stronghold of Buddhism, seem to have turned to the allied Jain system, especially in Central and Southern India. Bundelkhand is full of Jain images of the eleventh and twelfth centuries, whereas Buddhist remains of that period are rare. The colossal monolithic nude Jain statues of the South are among the wonders of the world. That at Sravana Belgola in Mysore, which stands clear on the top of a hill, is 57 feet in height, cut from a single block of gneiss. There are similar colossi at Yenūr and Kārkala in South Kanara. The last named was erected in A. D. 1432. As works of art their merits are not great. The colossal reliefs carved in the rock face at Gwalior are also Jain, and belong to the same period, having been executed between A. D. 1440-73. The later Buddhists used images as freely as the Jains and Brāhmanical Hindus; and the adherents of all three religions drew on a common stock of symbolism and convention in the same way as in early times. The mediaeval Buddhist statuary of Bihār, consequently, is almost identical with that of Hindu temples, and the two classes of objects are frequently confounded, even by skilled archaeologists. The Jain statues are ordinarily, although not always, distinguishable from the Buddhist by their nudity, but the accessories of both do not differ widely.

Hindu decoration on early Muhammadan buildings. As the Muhammadan invaders gradually established themselves in India and extended their conquests from the Punjab to the east and south, they naturally introduced new forms of architecture adapted to the needs of their religious worship and the taste of foreigners from Central Asia. But the conquering armies of Islām did not carry with them a crowd of masons and artificers, and the new rulers of India were compelled to build their mosques and palaces by the aid of Hindu workmen. Hence all the earlier Muhammadan buildings, even as late as the reign of Akbar, show unmistakable traces of Hindu influence, and many are almost as much Hindu as Muhammadan in style. . . . The specially Indian ornaments of the earlier Muhammadan buildings need not detain us. They comprise geometrical patterns and floral devices in great variety, exactly the same as those found in innumerable temples at Khajurāho, Mount Abu, and in fact, all over India.

Foreign modes of decoration. But Indian ornament was supplemented, and ultimately displaced, by foreign forms of decoration, the history of which is worth tracing in some detail. One of the most characteristic ornaments of Muhammadan buildings in India is mosaic or inlay in various forms. In the earliest examples, of which Alā-ud-dīn's gateway on the south side of the Kutb mosque, erected in the year A. D. 1310, is the most notable, the inlay is confined to broad bands of white marble set in the red sandstone, and has a very pretty effect. Mother-of-pearl is combined with marble on the tomb of Ahmad Shāh's queen at Ahmadābād (A. D. 1430), and is also used on the wooden canopy of the tomb of the saint Salīm Chishtī at Fatehpur-Sikri, applied as a tessellated incrustation of delicate design (A. D. 1571). Akbar's great mosque at Fatehpur-Sikri, erected in the same year, in imitation of a mosque at Mecca, is freely decorated with white marble mosaics of Arabian and Persian geometric patterns, occasionally varied by the insertion of blue and green enamel. A fine mosaic pavement is to be seen at the Rayan Angan palace at Udai-pur, of the same date. All these early mosaics of different kinds were immediately derived from Asiatic models.

Pietra dura. But, during the reign of Jahāngīr, the European artists and craftsmen then in the service of the Great Mogul introduced the Florentine, or *pietra dura*, style



TURRET FROM ITIMĀD-UD-DAULA'S TOMB AT AGRA.

of mosaic, which during the reign of Shāh Jahān (A. D. 1627–58) superseded the older styles. It is composed of thin sections of hard stones (*pietra dura*), such as jasper, carnelian, and agate, cut to the shapes required, and neatly bedded in the masonry with cement. This style of mosaic, when executed by capable workmen, can be applied in the most various patterns, and is of an extremely decorative character. Although the form of the *pietra dura* mosaic appears to be of European origin, the designs are Asiatic. All travellers who have visited Agra and Delhi are familiar with the exquisite *pietra dura* decorations of the Taj, of the tomb of Itimād-ud-daula, and of the royal palaces erected during Shāh Jahān's reign. The fine sepulchre of Jahāngīr, near Lahore (A. D. 1627–8) is remarkable for its display of 'all the resources of inlaying in marble, stone, and pottery, lavished on the central tomb. There is no structure in India which presents so many classes of mosaic work as this' (Cole).

Early Mughal paintings. Painting was first used extensively as an architectural decoration by Akbar, who imported artists from Tabriz and Shiraz in Persia; but, according to Major Cole, earlier examples are to be seen on the interior of the dome of Shāh Ālam's tomb at Ahmadābād (A. D. 1475); on the walls of Mān Singh's palace at Gwalior (about A. D. 1507); and on the ceilings of the Kila Kohna mosque at Delhi (A. D. 1540). Akbar and his successors, Jahāngīr and Shah Jahān, freely invoked the aid of the painter's art, and had no hesitation in permitting the delineation of the human figure, notwithstanding the prohibition of the Korān.

The Mughal school of painting was inspired by Persian models and to some extent influenced by European example. It is distinguished for its skill in portraiture, its accurate delineation of animals and plants, and for extraordinary delicacy of execution. During the eighteenth century a Hindu development of the school produced some pretty works, especially the *Rāgmālās*, or sets of pictures depicting the personified *Rāgs*, or 'musical modes'; but Akbar's well-meant efforts cannot be said to have succeeded in founding a great national school of painting, and recent attempts by artists in Bengal and elsewhere are still far from having attained that object.

The Indo-Persian school devoted itself to the production of

works intended to please princes and courtiers. It did not appeal to a wider public. In India artistic taste has been generally confined to certain castes or very limited classes, and to this day, few Indians, even the most highly educated, care for art. The art of miniature painting still lingers at Agra and Delhi, and the few craftsmen who practise it produce pretty, but feeble and lifeless works, of more interest to the curio-hunter than to the historian of art. The encouragement of artists by the Mughal emperors resulted in the production of numerous exquisitely illuminated manuscripts for the royal libraries, but of these sumptuous productions comparatively few survive. An exceptionally fine collection of works of this class has been presented by a Muhammadan gentleman to the city of Patna.

LESSON 14. NUMISMATICS

I. *The Ancient Coinage of Northern India.*

Introduction of coins into India. The introduction into India of the use of coins, that is to say, metallic pieces of definite weight authenticated as currency by marks recognized as a guarantee of value, may be ascribed with much probability to the seventh century B. C., when foreign maritime trade seems to have begun. There is reason to believe that the necessities of commerce with foreign merchants were the immediate occasion for the adoption by the Indian peoples of a metallic currency as well as of alphabetical writing.

'*Punch-marked*' coins. Coinage is, according to Oriental ideas, 'the business, not of the state, but of the banker and merchant.' In accordance with this principle, the earliest Indian currency was struck by private persons, not by governments. This consists of bits of metal more or less rectangular in shape, and trimmed when necessary at the corners so as to scale the required weight. Sometimes the coins are altogether blank, more frequently they are blank on the reverse only, and, more frequently still, the reverse is impressed with one or two small marks, struck by a punch. The obverse commonly exhibits many such marks, impressed by separate punches at different times. This ancient coinage is therefore generally described by numismatists as 'punch-marked'. The

Laws of Manu denote coins of this kind as *purāṇas*, or 'eldlings', and Southern writers call them *salākās*, or 'dominoes'. The metal is usually impure silver, containing about 20 per cent. of alloy.

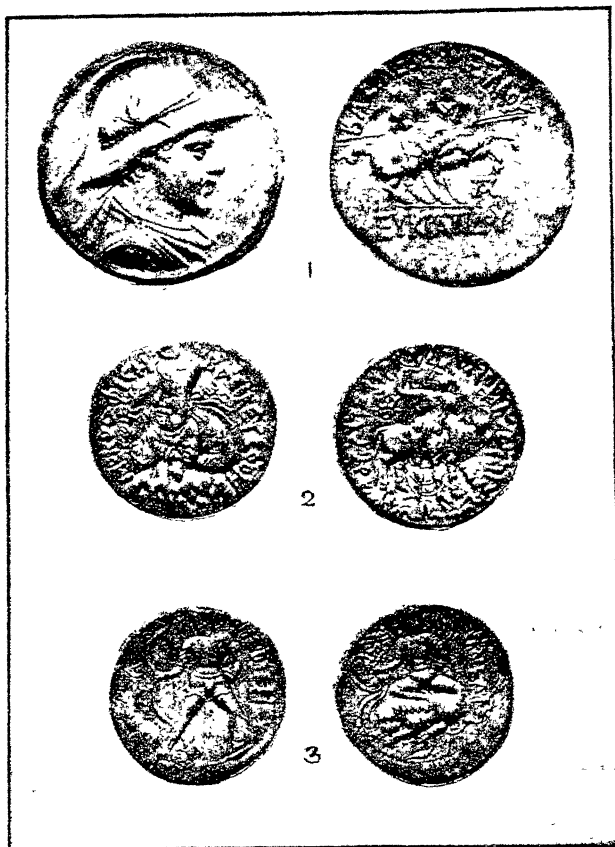
The most archaic-looking coins known are punch-marked copper pieces, found at extremely ancient sites near Benares. They are much more elongated in form than the silver pieces, and seem to have been cut from a bar and struck to a different scale of weights. These rare copper pieces are possibly older than any silver coin, and may be a memento of Babylonian trade by overland routes.

Cast coins. Cast coins, usually of copper or bronze, were largely used in Northern India along with the punch-marked currency. A few specimens are inscribed with characters dating from about 300 B. C.

Bactrian coins. Alexander's victorious progress through the Punjab and Sind from March, 326, to September, 325 B. C., produced little direct effect on the Indian coinage. In the middle of the third century B. C. the independent Bactrian kingdom was separated from the Seleucid empire of Syria, and in the following century several Bactrian monarchs, notably Eucratides and Menander, made incursions into India, where their coins are now found. Scions and connexions of the Bactrian royal family established themselves as rulers of principalities in the countries now known as Afghānistān, Baluchistān, and the Punjab, which became Hellenized to a considerable extent. These princes issued an abundant currency, chiefly in silver and copper, modelled on Greek lines, and up to about 150 B. C. exhibiting a high degree of artistic merit.

The Punjab excepted, India was little affected by the ideas of the West, and the vast populations of the interior continued their purchases and sales through the medium of the indigenous private currency. For this reason no coins are known bearing the name of Asoka (272-232 B. C.), or of any other member of the Maurya dynasty founded by his grandfather Chandra Gupta.

Kushān coins. The Indo-Roman coinage of the Kushān dynasty, commonly called Indo-Scythian, marks an epoch in the numismatic history of India. The Kushān kings, while retaining in their coin devices many features peculiarly



INDIAN COINS.

1. COIN OF EUCRATIDES.

2. COIN OF KADPHISES II.

3. COIN OF CHANDRA GUPTA II.

Oriental, definitely abandoned the native Indian tradition and adopted in essentials the European form of coin. From this time forward the principal coinages of Northern India are double-die pieces, issued by the authority of the sovereign, and usually bearing either his effigy or his name, or both.

Gupta coins. Later (A. D. 320) a new imperial dynasty arose. The founder of the line assumed the name, Chandra Gupta, of the first Indian emperor, and fixed his capital at Pataliputra, the ancient seat of empire. Gupta gold coins, which Sir A. Cunningham considered to be the most interesting series in India, are in the main a continuation of the Kushān coinage. The artistic merit of the best Gupta coins seems to be closely related to the literary revival which found its highest expression in the poems of Kālidāsa. The favour in which classical Sanskrit was held in those days is clearly indicated by the coin-legends, which are expressed in neither Greek nor Prākṛit, but in formal Sanskrit written in accordance with the grammarian's rules. But the glory of this literary and artistic revival did not last long. The coinage shows signs of decadence early in the fifth century, and the final victory of the Huns about A. D. 480 swept away nearly all manifestations of intellectual and imaginative effort.

The rich variety of the earlier Gupta gold coin devices gradually settled down into one pattern, with the standing king for the obverse, and a goddess seated on a lotus flower for the reverse type. These two designs dominate the coinage of Northern India for centuries.

Degraded coins. After the fall of the Gupta empire the coinages of the countless native rulers and of the rude Hun invaders vie with each other in barbarous degradation. The prevalent style in the seventh, eighth, and ninth centuries was a rude imitation of the Sassanian coins of Persia, which are characterized by a representation of a fire-altar with supporters. About the end of the ninth century several Hindu dynasties of note begin to emerge. These dynasties, the Chandels of Mahoba, the Tomars of Delhi, the Rāthors of Kanauj, and the Haihayas of Chedi or Central India, introduced a new style of coin. In consequence, apparently, of Muhammadan example, the king's name and title in three lines occupied the obverse in lieu of his effigy, the reverse device being the seated goddess of the Gupta series. Another new

type of coin was invented by the mint-masters of the Brahman kings of Ohind, commonly, but erroneously, called 'the Hindu kings of Kābul' (circa A.D. 860–950), which is known to numismatists as the 'Bull and Horseman', because the device on the obverse is a horseman, and that on the reverse a bull.

II. *Muhammādan and Indo-European.*

Muhammādan coins. In A.D. 712, Muhammad, the son of Kāsim, conquered Sind, and the governors set up by him or his successors issued a considerable series of coins, chiefly silver, but including some copper, which have the distinction of being the first Muhammādan coins struck in India. They are modelled on the mintage of the Khalīfas of Damascus and Baghdād.

Ghazni coins. Mahmūd of Ghazni (A.D. 998–1030) struck coins which are remarkable for possessing a marginal legend in Sanskrit, explanatory of the Arabic inscription. His son Masaud, and his grandson Maudūd, also struck coins at the same mint, copied from the 'Bull and Horseman' type of the Kings of Ohind, and did not hesitate to violate the strict rule of the Korān by placing the images of creatures on their coins.

Ghorī coins. The real founder of the Musalmān dominion in India was Muizz-ud-dīn Muhammad bin Sām, otherwise known as Shahāb-ud-dīn, or Muhammad Ghorī (A.D. 1193–1205). His Ghazni coins follow the old style of the Khalīfas of Baghdād; but his Indian coins usually exhibit the Ohind device of the 'Bull and Horseman'. Certain gold coins struck by him in the Gangetic valley actually bear the image of the Hindu goddess Lakshmi. Images then disappear from the Muhammādan coinage of India, and are not again seen until the unorthodox Akbar and his son Jahāngir ventured to re-introduce them on some limited issues.

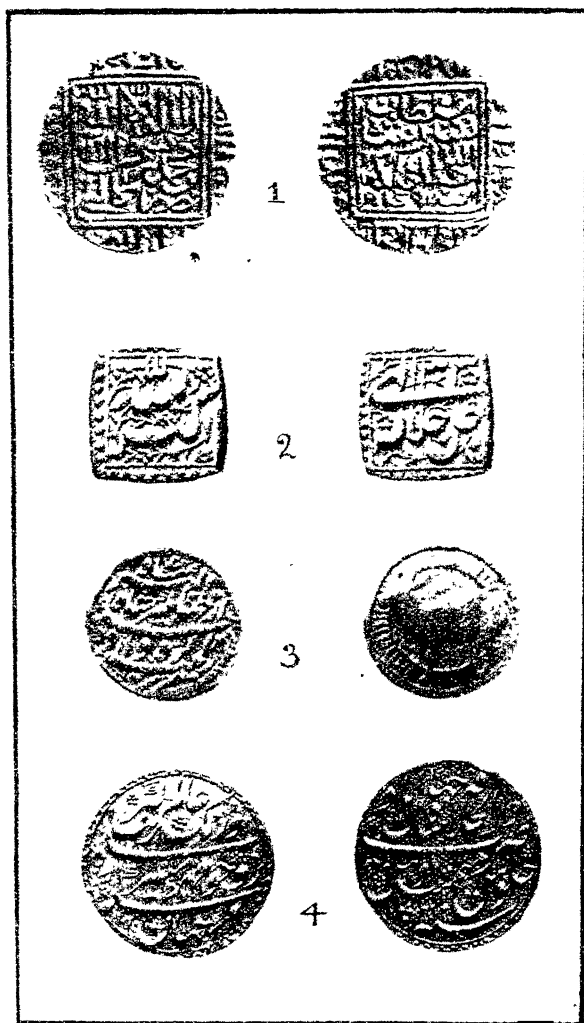
Tughlak coins. Muhammad, son of Tughlak (A.D. 1324–51), one of the strangest figures in history, who was 'learned, merciless, religious, and mad', has been called by Mr. Thomas the 'prince of moneyers'. The title was justly earned by the variety and beauty of his coins, which surpass those of all other Indian sovereigns in the elegance of their Arabic legends. This mad king tried to replenish his treasury by the simple

expedient of coining brass in vast quantities and ordaining that it should be accepted as silver. A century after the tyrant's death, 'mountains' of the rejected coins piled up in his fort of Tughlakābād testified to the failure of his crude finance.

Sūri coins. Sher Shāh, the Afghān rival of Bābar's son Humāyūn, is entitled to the honour of establishing the reformed system of currency, which lasted throughout the Mughal period, was maintained by the East India Company down to 1835, and is the basis of the existing British currency. His silver rupees, which weigh 180 grains, and contain 175 grains of pure silver, being thus practically equal in value to the modern rupee, often have the king's name in Nāgari characters in addition to the usual Arabic inscriptions.

Akbar's coins. The early issues of the great Akbar (1556-1605), the contemporary of Queen Elizabeth, closely follow Sher Shāh's models. In the thirtieth year of his reign (A.D. 1584) Akbar utilized the coinage to express his attachment to the 'Divine Religion' which he had invented. His coins were henceforward dated in the years of the Divine Era beginning with February, 1556, the first year of his reign; and Persian names of the months were substituted for the customary Arabic. Many of the coins bear the ambiguous words *Allāhu Akbar*, which may be interpreted as meaning either 'God is most great', or 'Akbar is God', and were probably intended to convey a double sense to the select few who had been initiated into the mysteries of the imperial creed.

Coins of Jahāngīr and his successors. The issues of Jahāngīr are remarkable for their beauty and also for the introduction of a number of curiosities—the delight of the collector. He was the only Muhammadan ruler of India who ventured to place his portrait on his coins. The next emperor, Shāh Jahān (A.D. 1627-58), abstained from his father's numismatic eccentricities, and issued an abundant coinage in silver and gold. The coinage of the fanatical Aurangzeb (1659-1707) is, of course, strictly orthodox. The numismatic history of his feeble successors is remarkable for the fact that, notwithstanding the disintegration and disorder of the empire, the weight and fineness of the imperial coinage continued to be maintained. By gradual steps it passed into the Anglo-Indian coinage.



INDIAN COINS.

1. COIN OF SHER SHĀH.

2. COIN OF AKBAR.

3. COIN OF JAHĀNGIR.

4. COIN OF AURANGZEB.

The Company's coinage. The East India Company, which had for a long time surreptitiously copied the imperial issues, obtained in January, 1717, a formal grant of the right to coin at Bombay. Permission to copy the rupees of Arcot was granted in 1742, and in 1757 the Company's mint at Calcutta was legally established. This unsatisfactory system was swept away by the legislation of 1835-6, when 'the Company established an English coinage with the head of William IV in place of the name of the Mughal emperor, and all the older issues were ordered to be suppressed'. From 1835 the evolution of Indian coinage may be considered as closed; the currency of India from that date is a branch of that of the British Empire.

III. *Southern India.*

The coinage of Southern India. The coinage of Southern India presents greater difficulties to the student and offers less reward for his labours than that of the North. The political history of the Dravidian countries is obscure, examples of really ancient coins are rare, and the comparatively modern issues which fill collectors' cabinets are ill adapted as aids to the historian striving to recover the outlines of a long-forgotten past. The coins are frequently extremely minute, sometimes weighing less than 2 grains; the devices are crude and indistinct; legends are commonly either absent, or too brief and enigmatical to be of use; and dates, except on certain late Muhammadan coins, are invariably lacking. The extraordinary scarcity of really ancient southern coins may be partially explained by the destructive raids of plundering invaders from the North, who swept the country bare, and brought home untold treasure.

The domino-shaped punch-marked coinage was common to both Northern and Southern India. The ancient cast coins do not seem to occur in the South. Die-struck silver coins of at all ancient date are very few and unimportant. In historical times the principal coinage of the South was in gold, not silver. When or how this gold coinage originated is not known; the conjecture seems probable that the discovery of the gold-mines was the immediate cause of the substitution of gold for silver in the main currency.

Scales of weight of coins. The southern system of coinage, like the northern, is based on the weights of indigenous seeds. The northern scale rested on the *ratī* seed, which may conveniently be taken as equivalent to about 1·80 grains. According to this system the *purāṇa*, or silver punch-marked coin, was equal in weight to thirty-two *ratī* seeds. The southerners used as the basis of their scale the *kalanju* seed, or 'Molucca bean', weighing about 50 grains, and the *manjādi* seed, weighing about a tenth of the *kalanju*. According to this scale, the *purāṇa* was roughly equal in weight to a *kalanju* seed. The standard coins, subsequently known as *pon*, *hon*, *varāha*, or 'pagoda', usually weighed approximately 52 grains, and the small coins, the *fanams* of later times, were each a tenth of the 'pagoda' of 52 grains. The boar device characteristic of the Chālukya coinage is the origin of the vernacular designation *varāha* or *varāgan* ('boar'), universally applied to the peculiar gold coin of Southern India, to which the European settlers subsequently gave the name 'pagoda', supposed to be a corruption of the word '*bhagavati*', or 'goddess'.

LESSON 15. INDIAN ARCHITECTURE

Definition. Architecture, it must be understood, is something more than the mere art of building in any form; and, if a definition is required, it must be that it is the fine art of designing and constructing ornamental buildings in wood, stone, or other material. It is thus distinct from common building or civil engineering.

Early architecture—wooden. It is generally conceded that in the early architecture of India, as in that of Burma, China, and Japan, wood was solely or chiefly employed; and, if brick or stone were in use, it was only as a building material for foundations and for engineering purposes. Even as late as the end of the fourth century B.C. we find Megasthenes stating that Pātaliputra, the capital of Chandra Gupta, was 'surrounded by a wooden wall pierced with loopholes for the discharge of arrows'; and if the capital were defended by such palisading, we may fairly infer that the architecture of the time was wholly wooden. And, for all religious or private

structures in a tropical climate, wood has marked advantages over stone. At whatever date stone came to be introduced, the Hindus continued and repeated the forms they had employed in the earlier material, and preserved their own style, so that it bore witness to the antecedent general use of wood. The perishable nature of this material readily accounts for the disappearance of all Indian buildings of early date. Memorial *stūpas*, it is true, have been assigned by some archaeologists to a date previous to the fourth century B.C.; but they have been excavated with so little conception of scientific method that the main result has been the destruction of such evidence of their real age as might have existed. We have thus no monument of an architectural character that we can cite as certainly belonging to a date before the third century B.C.

Stone architecture—stūpas. By the middle of the third century B.C. we find the great Asoka in communication with the contemporary kings of Syria, Egypt, Macedonia, Epirus, and Cyrene; and to his reign belong the great stone pillars, with capitals of Persian type, that are engraved with his religious edicts. A convert to Buddhism, Asoka is credited with the construction, all over the country, of vast numbers of *stūpas*—monumental structures enshrining relics of Sākyamuni Buddha or other Buddhist saints; and with them were erected monasteries and chapels for the monks. We cannot possibly identify any of the few still existing *stūpas* as having been actually built by him; but there can scarcely be a doubt that the sculptured rails at Buddh Gayā and Bharhut, the caves at Barābar, and the oldest of the cave monasteries in Western India, were excavated during the existence of the Maurya dynasty, or at least within the two centuries following Asoka's accession. The Sānchi-Kānākhedā *stūpas*, of which two or three were quite entire at the beginning of the nineteenth century, and the second largest of which almost certainly dates from about 300 B.C., may be accepted as examples of the Asoka pattern.

Cave temples. The earlier rock temples must be of about the same age as these *stūpas*. Indeed in the Barābar hills, about sixteen miles north from Gayā, we find a group of caves in three of which are short inscriptions of Asoka, dated in his twelfth and nineteenth year, and dedicating them to the Ājīvikas, who seem to have been a naked sect, similar

to the Jains. Close by are three more caves, dedicated to the same sect by Asoka's grandson Dasaratha about 215 B.C.

Gandhāra monuments. We come next to a class of remains found on the north-west of India, and generally known as belonging to the ancient province of Gandhāra. Most probably they date from the commencement of the Christian era till about the fourth century, and belong to the Mahāyāna school of Buddhism—a form of religion differing entirely from that early Buddhist cult which had no images of gods or saints, but paid reverence to relics and sacred symbols. The influence of classical art manifested in many of these Gandhāra images leaves little doubt that they were modelled after foreign and Western patterns. The Graeco-Bactrian kingdom had passed away before the appearance of these sculptures; but Ionians and other Greeks went far and wide with their merchandise and their art-productions, and Buddhist emissaries had for long travelled westwards as far as into the Levant.

Gupta architecture. By about the fifth century the architectural forms had developed in richness and variety. For convenience the prevalent style of this later age is sometimes called Gupta, for from about A.D. 319 to 520 the principal ruling dynasty in Hindustān was that of the Guptas, but the style continued long after their extinction. The spires of the temples were simple in outline, and rose almost vertically at first and curved inwards towards the summit, which was always capped by a large circular fluted disc supporting a vase, whilst the surface of the tower was covered with a peculiar sort of horseshoe diaper, which was usual in early times.

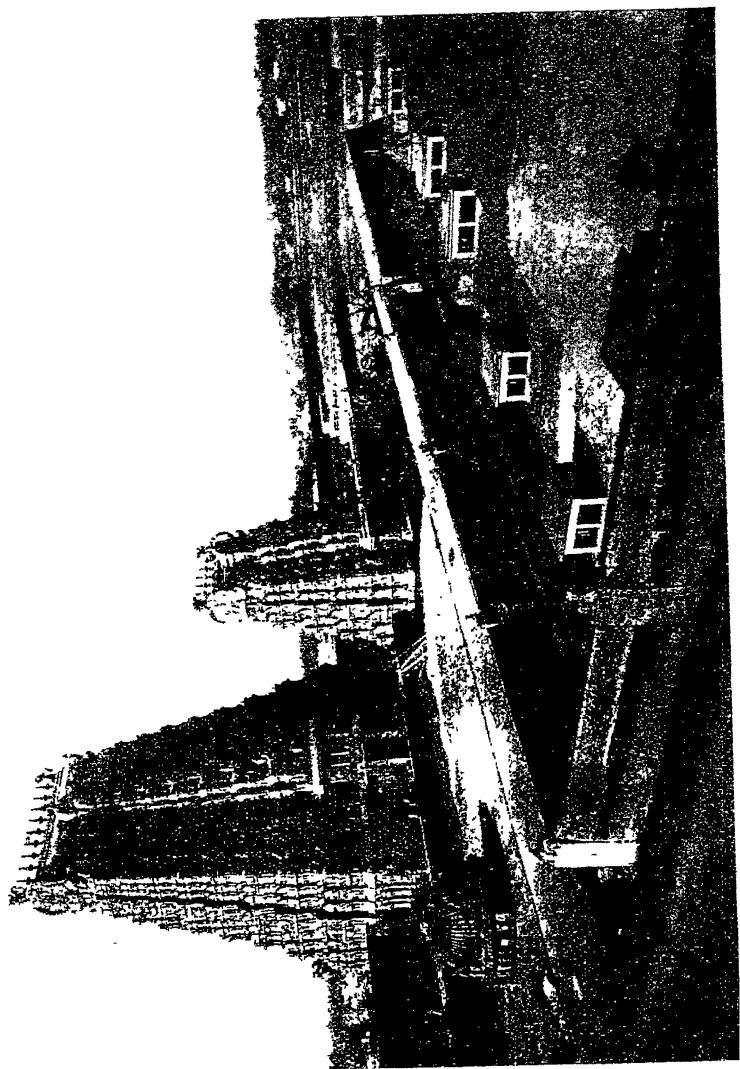
Kashmīr architecture. From the eighth century, if not earlier, till about the Muhammadan conquest, we find in Kashmīr and the vicinity a style of architecture having in it a certain classical element, which at once reminds us of more western forms and has little if any connexion with the art of the rest of India. The most notable type of this Kashmīr style is the temple of Mārtand, about three miles east of Islāmābād or Anantnāg, the old capital. It stands in a court about 220 ft. by 142 ft., surrounded by the ruins of some eighty cells, with a large entrance porch at the east end. The name given it implies that it was a temple of the Sun,

and we know that, till the eleventh century at least, the worship of the sun was very prevalent in the north-west of India.

Jain temples in Kanara. Another departure from the style of Hindu architecture has been remarked in certain Jain temples and tombs at Müdbidri in South Kanara. These works have double and triple sloping roofs; indeed the tombs consist of quite a series of converging roofs, and remind us at once of Nepāl *chaityas* or Chinese towers.

Dravidian architecture. The architecture of the Dravidian area was essentially different from that of other regions of India, and of one type, gradually changing, but becoming worse rather than better. So far as yet known, we cannot point to any building within the Dravidian area of very early date, or before the sixth or seventh century, if indeed quite so early. One of the best-known groups of monuments in the southern part of the Peninsula is that of the Māmallapuram Rathis, or 'Seven Pagodas', on the seashore to the south of Madras. The next landmarks in Dravidian art are the temple of Virūpāksha at Pattadkal and the rock-cut temple of the Kailāsa at Ellora. The later examples of the Dravidian style were overloaded with carving: every part of the building was covered with ornamentation in the most elaborate and intricate designs the artist could invent; but while the imagination may be impressed with the evidence of power and labour so lavished on ornament—much of it truly elegant—the better judgement is offended by want of architectural design in the arrangement of the constituent parts of the whole. One of the best examples of this order is the great temple at Tanjore.

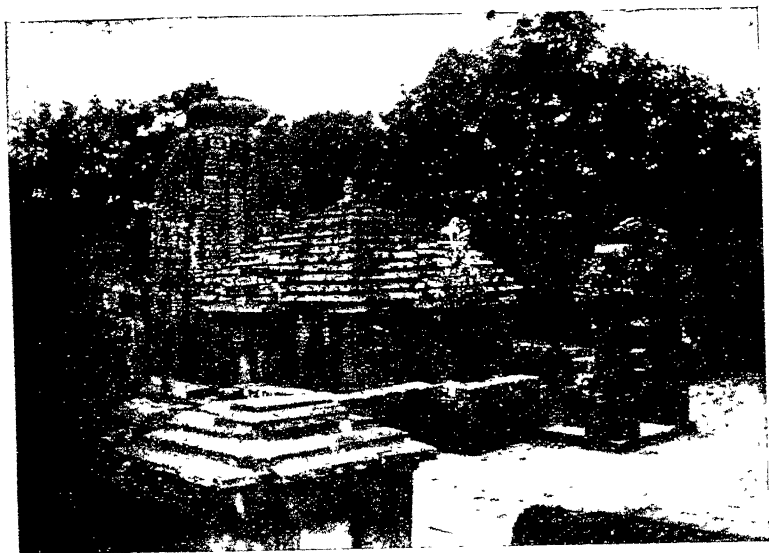
Chālukyan architecture. Leaving the Dravidian, we come to the next great architectural area—that which Mr. Fergusson has called the Chālukyan style—prevailing over the whole basin of the Godāvari, the northern boundary being drawn roughly from the south end of the Chilka Lake in Orissa to the north-west, following for a considerable distance the course of the Mahānadi river, along the Sātpurā Hills to the Tāpti, and then south-west to the coast, eighty miles south of Surat. Among Chālukyan temples a prevalent form is that of three shrines around one central *mandapa* or hall. Some of the details of the Chālukyan style are very elaborate: in fact,



MADURA TEMPLE.

most of the finer temples were completely overlaid with sculptural ornament (see illustration, p. 143).

Indo-Aryan architecture. Under the Indo-Aryan style of Northern India, or that area which is usually designated as Hindustān, are classified monuments of very various orders, and we might, if necessary, separate these into two or more distinct types. The characteristic that first appeals to our notice is the curvilinear spires of the temples, and next to



MUKTESVARA TEMPLE, BHUVANESVAR, ORISSA.

this the absence of that exuberance of sculpture seen in the great Chālukyan temples of the South; while in many cases, as in the Jain temples, a greater central area has been obtained by arranging twelve columns so as to support a dome on an octagonal disposition of lintels. What is known as the Jain style of architecture in Western India is a development or variety of this Indo-Aryan order, and was used by Hīndus and Jains alike all over Rājputāna, Mālwa, and Gujarāt. The temples at Bhubaneswar (Bhuvanesvar) exhibit the Indo-Aryan style perhaps in its greatest purity.

Muhammadian architecture. What is popularly known as Saracenic architecture is the style which was adopted by the Muhammadans when they became the ruling race in India, from about the end of the twelfth century. But while largely applied to mosques and tombs, it varied much at different periods and under the various local Muslim dynasties in different parts of the country. The Delhi emperors, for the first three centuries of their dominion, were of Turkī or Pathān stock, and were succeeded in the early part of the sixteenth century by the Mughal dynasty founded by Bābar, when the latter materially influenced the architectural style of the previous dynasty.

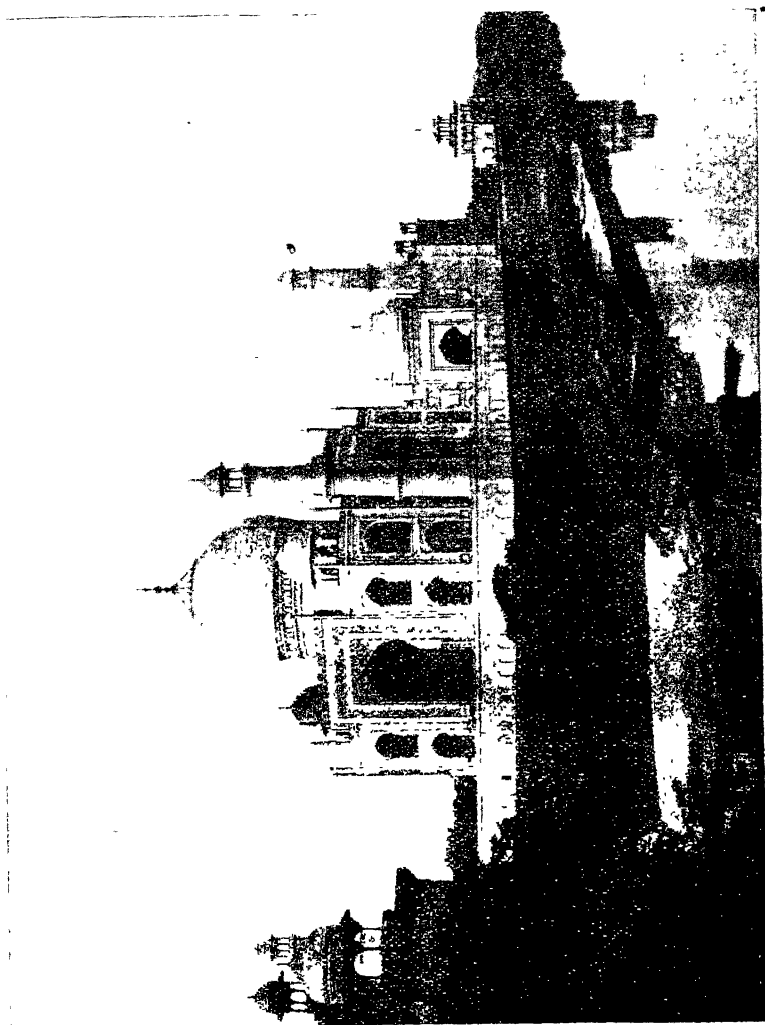
Then there were local kingdoms which had styles more or less their own: Bengal became a separate kingdom at the beginning of the thirteenth century; the Bahmani dynasty at Gulbarga and Bīdar dates from the middle of the fourteenth century; the kingdoms of Jaunpur, Gujarāt, and Mālwa from about A.D. 1400; Bijāpur and Ahmadnagar from about 1490, and Golconda from twenty-two years later. Exclusive of other varieties of less extent and individually not so distinctly marked off, we have thus some ten more or less fairly different styles of Saracenic structures.

Mughal Saracenic style. The Mughal phase of Indian Saracenic architecture began under Bābar (1526–31), but we have no important work of his left, nor of his son Humāyūn. The first examples of the style belong to the time of Sher Shāh (1539–45), one of the most characteristic of which is the Kila-kohna or Sher Shāh Masjid (1541) at Purāna-Kila, near Delhi, and there are a few other fragments there and at Rohtās. But though the later developments of the style in the rich remains at Delhi, Agra, Fatehpur-Sikri, and some other places have been largely surveyed and illustrated, these earlier structures, though so interesting as the initial forms of the style, have hitherto been neglected for the more ornamental examples of later date. The first, too, seems to have suffered most under our own rule. During the whole period of the Mughal dynasty, as Mr. Fergusson has well remarked, there is a 'unity in the works and a completeness in their history which makes the study of their art peculiarly fascinating; and some of their buildings will bear comparison, in some respects, with any architectural productions in the world.'

Akbar. With the emperor Akbar (1556-1605) the Mughal styles made a great advance; he built very largely, and art was living and developing so vigorously during his long reign that it would be difficult to enumerate all the peculiarities of his numerous buildings. As in the Gujarāt and other styles, there is a combination of Hindu and Muhammadan features in his works which were never perfectly blended. Like their predecessors, the Pathāns, the Mughals were a tomb-building race, and those of the latter are even more splendid than those of the former, more artistic in design, and more elaborately decorated. The most splendid of these, and the most renowned building in India, is the far-famed mausoleum, the Tāj Mahal at Agra—the tomb of Mumtāz Mahal, the wife of Shāh Jahān; it is surrounded by a garden, as were almost all Muslim tombs.

Jahāngir. With Akbar's death the style underwent a change: the Hindu features disappeared entirely, as if outgrown. Jahāngīr made Lahore his principal residence, and Agra and Delhi have little to show belonging to his rule. His great mosque at Lahore is in the Persian style, covered with enamelled tiles; his tomb near by (1630-40) was used by the Sikhs as a quarry from which to build their temple at Amritsar; and the capital he built at Dacca in Bengal, being mostly of brickwork, in so moist a climate has gone to utter decay. At Agra, the tomb of Itimād-ud-daula belongs to this reign, and being built entirely of white marble and covered wholly by *pietra dura* mosaic, it is one of the most splendid examples of that class of ornamentation anywhere to be found.

Shāh Jahān. Under Shāh Jahān (1628-58) a remarkable change came over the style; its force and originality gave way to a delicate elegance and refinement of detail. This is well illustrated in the magnificent palaces he built at Agra and Delhi—the latter once the most exquisitely beautiful in the East. Of the Tāj Mahal (1632-54), fortunately so well preserved, nothing need be added; its extreme delicacy, the richness of its material, and the complexity of its magnificent design have been dwelt on by writers of all countries. So also of the surpassingly pure and elegant Motī Masjid in the Agra Fort, all of white marble: it is among the gems of the style. The Jāmi Masjid at Delhi (1650-66) is a really im-



THE TAJ MAHAL.

posing building, and its position and architecture have been carefully considered so as to produce a pleasing effect and feeling of spacious elegance and well-balanced proportion of parts. In his works Shāh Jahān presents himself as the most magnificent builder of Indian sovereigns.

Aurangzeb. With the reign of Aurangzeb (1658–1707) the decline of taste set in at once. With little true reverence, it was hardly to be expected he should delight in architectural magnificence. Spending much of his time in camps, he built no palace of importance; the tomb of his favourite wife at Aurangābād—vulgarly believed to be like the Taj at Agra—is commonplace to a degree, and he erected no tomb for himself, though he lived to a great age. The works of his reign seem mostly to have shared in the same decline of style; squared stone and marble gave way to brick or rubble with stucco ornament.

Later architecture. The buildings at Seringapatam and Lucknow are of still later date, and are in certain respects imposing, but in detail are often tawdry. Yet architecture is not dead in India. Even in recent years there have been erected tombs and temples of purely native origin and of much elegance in detail, while retaining the essential elements of structural design; in others again, these elements have parted company, and no amount of elegant ornament can compensate the want of propriety in such structures. Otherwise the imitation of a foreign style is rapidly proving fatal to indigenous art.

LESSON 16. SANSKRIT LITERATURE

Importance of Sanskrit literature. For a full comprehension of modern India a knowledge of Sanskrit literature is indispensable. The language in which it is written was, in its earliest form, the parent of nearly all the vernaculars of Northern India, while even the Dravidian tongues of the South are saturated with Sanskrit words. The literature itself furnishes the key to the civilization of the Hindus, the vast majority of the population of the Indian Empire. While ranking very high among the literatures of ancient peoples in

aesthetic merit, it is superior to all as a source for the study of human evolution. An indication of its importance in this respect is the fact that, while the discovery of the Sanskrit language gave rise to the science of Comparative Philology, acquaintance with the Vedas resulted in the sciences of Comparative Mythology and Comparative Religion. One of the two departments in which the main strength of Sanskrit literature lies is religion. This in part explains how the Indians are the only division of the Indo-European family which has created not only a great national religion, Brāhmanism, but also a great world-religion, Buddhism. In philosophy, too, the Indian mind has produced independently several systems which bear evidence of high powers of speculation. The great interest, however, which these two branches of Sanskrit literature have for us lies not so much in the results arrived at, as in the fact that they reveal every step in the evolution of religious and philosophical thought.

Owing chiefly to the gigantic mountain barrier which isolates the Peninsula from the rest of the world, the civilization of India, as well as the literature which reflects it, displays not only an originality, but also a continuity, which has scarcely a parallel elsewhere. Thus no other country (with the possible exception of China) can trace its language, literature, and institutions through an uninterrupted development of more than three thousand years.

Two literary periods—the Vedic and the Sanskrit. The history of Ancient Indian literature naturally falls into the two main periods of the Vedic and the Sanskrit. The former, extending from perhaps as early as 1500 B.C. to about 200 B.C., embraces in its earlier phase a religious poetical literature which arose in the plain of the Indus, while the products of its latter half, theological treatises in prose, were composed in the plain of the Ganges. During the Vedic age Aryan civilization overspread the whole of Hindustān, the vast tract bounded by the Himālaya and the Vindhya ranges on the north and south, and by the mouths of the Ganges and Indus on the east and west. The Sanskrit period, during which Brāhman culture was diffused over the Deccan, or the 'South', reaches from near the end (c. 300 B.C.) of the Vedic period down to the beginning of the Muhammadan conquest, or about A.D. 1000. Generally secular in its subjects, it has

notable achievements to show in nearly every department of literature, as well as in various branches of science. Historical works in the true sense are, however, entirely wanting. Hence we usually know nothing at all about the lives of Sanskrit authors, and definite dates do not begin to appear in connexion with them till about A.D. 500.

Paucity of chronological data. The chronology of the Vedic period is purely conjectural, resting on internal evidence alone. Three main literary strata can here be distinguished. The lower limit of the second cannot be placed below 500 B.C., since its latest doctrines are presupposed by Buddhism, and the year of Buddha's death has been calculated, with a high degree of probability, from the recorded dates of the various Buddhist Councils, to be about 480 B.C. The earliest stratum, that of the Vedic hymns, may be assumed roughly to extend from 1500 to 1000 B.C.

For the Sanskrit period we have, in addition to internal evidence, a few chronological landmarks furnished by the visits of foreigners. The earliest actual date of this kind is Alexander's invasion of India in 326 B.C. Then came the Greek Megasthenes, who, about 300 B.C., resided for some years at the court of Pātaliputra (the modern Patna), and has left a valuable though fragmentary account of India in his time. Many centuries later several Chinese pilgrims paid prolonged visits to India. The most important of them were Fa-hian (A.D. 399-414), Hiuen Tsang (630-45), and I Tsing (671-95). The records of these three travellers are extant, and have all been translated into English. Besides shedding light on the social conditions, the religious thought, and the Buddhist antiquities of India in their day, they supply some general and specific facts about Indian literature. About the close of the Sanskrit period we have the very valuable account of India, at the time of the Muhammadan invasion, by the Arabic author, Albērūnī, written in A.D. 1030.

The Vedic language. The language in which the Vedas were composed is an older form of classical Sanskrit, differing from the latter on the whole about as much as Homeric differs from classical Greek, or the Latin of the Salian hymns from that of Varro. In the Vedic language several stages can, however, be distinguished. The Sanskrit period may be regarded as commencing from the time when the language was

stereotyped by the great grammarian, Pāṇini, at the end of the fourth century B.C.

The Sanskrit language. Classical Sanskrit is phonetically almost exactly the same as the earliest Vedic; grammatically it differs from the latter chiefly by the disappearance of many forms; linguistic changes are otherwise chiefly to be found in the vocabulary. This later phase of the language is called Sanskrit (*sam-skṛita*, 'put together'), the 'refined' or 'elaborate', as opposed to Prākṛit (*prākṛita*), the name of the old popular dialects which are descended from the earliest form of Sanskrit, and which in turn are the sources of the modern Indian vernaculars.

Prākṛit. These ancient Prākṛits occupy an important position by the side of the parent language. In the first place, the oldest Indian inscriptions, from the third century B.C. onwards, are written in Prākṛit, not Sanskrit. Again, in the ancient Indian dramas Prākṛit is to some extent employed beside Sanskrit. But the chief importance of the Prākṛits lies in the fact that they are the main literary vehicle of the two great non-Brāhmanical religions of India, Jainism and Buddhism. Prākṛit already existed in the sixth century B.C., for it was in the vernacular that Buddha preached his gospel in order that all might understand him. The oldest form of literary Prākṛit is Pāli, the sacred language of the type of Buddhism preserved in Ceylon. It is related to Sanskrit in much the same way as Italian to Latin, characteristically avoiding conjunct consonants and preferring final vowels. Thus the Sanskrit *sūtra*, 'thread', and *dharma*, 'duty', become *sutta* and *dhamma* respectively, while *vidyut*, 'lightning', assumes the form of *viṣṇu*.

Religious character of Vedic literature. From beginning to end Vedic literature bears an exclusively religious stamp; even its latest productions were composed at least to subserve religious purposes. This is, indeed, implied by the term 'Vedic'. For *veda*, primarily signifying 'knowledge', regularly either designates 'sacred lore' as a branch of literature, or has the restricted sense of 'sacred book'.

Three stages in Vedic literature. In Vedic literature three stages can be clearly distinguished. The first, creative and poetical, embraces the four Vedas, which were composed chiefly to accompany the oblation of the Soma juice or of

melted butter (*ghṛita*) offered to the gods. These Vedas are collections of hymns and prayers, called *Samhitās*, which were arranged for various ritual purposes. The creative epoch was followed by one in which the priesthood devoted their energies to the elaboration of the sacrificial ceremonial. Thus there grew up in sacerdotal tradition a new body of doctrine which assumed definite shape in the form of a number of theological treatises, entitled *Brāhmaṇas*, 'books dealing with devotion' (*brahman*). Written throughout in prose, they are notable as the oldest representatives, among the Aryan nations, of that type of composition. The *Brāhmaṇas* themselves gradually acquired a sacred character, being classed, in the next period, along with the hymns, as *śruti* ('hearing'), or 'revelation', that which was directly heard by or, as we should say, revealed to the seers of old. Later works on religious and civil usage, being regarded as less authoritative, were called *smṛiti*, or 'memory', as handing down only the tradition derived from ancient sages. Such is the character of the *Sūtras* ('thread' or 'clue'), which constitute the third and last stage of Vedic literature. These are compendia, composed in an extremely concise style of prose, which deal with Vedic ritual and customary law. Their main object is to supply a brief survey of the mass of details preserved in the *Brāhmaṇas* and in floating tradition.

Post-Vedic literature. The literary character of the post-Vedic age differs from that of the earlier in matter, spirit, and form. Vedic literature is religious; Sanskrit literature is secular. The religion itself which now prevails has undergone modification. The leading gods of the Veda having sunk to a subordinate position, the three great gods, *Brahmā*, *Vishṇu*, *Śiva*, are the chief objects of worship. New gods, such as *Kubera* (god of wealth), *Ganeśa* (god of learning), *Kārttikeya* (god of war), *Śrī* or *Lakshmi* (goddess of prosperity), *Durgā* or *Pārvatī* (wife of *Śiva*), have also arisen, besides the serpent deities and several classes of demi-gods and demons.

In contrast with the cheerful view of life apparent in the Vedas the later literature is tinged with pessimism, due, no doubt, to the now universally accepted doctrine of transmigration, and is pervaded by a moralizing spirit. There is also a strong romantic element in Sanskrit poetry, accom-



VISHNU ; FROM THE TEMPLE AT KONĀRAK, ORISSA.

panied by a tendency to exaggeration and excessive diffuseness in description.

Rise of epic poetry. Sanskrit literature is not a continuation and development of the later Vedic stage. There is abundant evidence to show that during the Sūtra period (500-200 B.C.), when the rich Pāli literature of Buddhism and probably also the Prākṛit literature of the Jain canon grew up, there also came into being the earliest form of Sanskrit secular poetry in the shape of epic tales. This epic poetry falls into two main classes. That which embraces old stories goes by the name of *Itihāsa*, 'legend', *Akhyāna*, 'narrative', or *Purāṇa*, 'ancient tale': while the other is called *Kāvya*, or 'artificial epic'. The *Mahābhārata* is the chief and oldest representative of the former group, the *Rāmāyaṇa* of the latter. Both are composed in the *śloka* metre; the *Mahābhārata*, however, has a small admixture of archaic verses in other metres, besides some old stories in prose. The *Rāmāyaṇa* is, in the main, the work of a single poet, homogeneous in plan and execution.

The Mahābhārata. The *Mahābhārata*, on the other hand, is a congeries of parts, the only connexion of which is the unity of the epic cycle with which they deal; its nucleus, moreover, has become so overgrown with didactic matter that the whole work wears the aspect of an encyclopaedia of moral teaching. It contains over 100,000 *ślokas*, equalling in length about eight times the *Iliad* and *Odyssey* combined. It is divided into eighteen books, called *parvas*, with a nineteenth, the *Harivaṃśa*, added as a supplement. The epic kernel of the *Mahābhārata*, or the 'Great Battle of the Descendants of Bharata', describes the eighteen days' fighting between Duryodhana, leader of the Kurus, and Yudhishtira, chief of the Pāṇḍus, who were cousins, both descended from King Bharata, son of Sakuntalā. Within this narrative framework has come to be included a vast number of myths, cosmogonic legends, and disquisitions on duty. Entire works, such as the *Bhagavadgītā*, a philosophical poem in eighteen cantos, are occasionally inserted in illustration of some particular assertion.

The Rāmāyaṇa. The *Rāmāyaṇa* in its present form extends to about 24,000 *ślokas*, and is divided into seven books. It has, however, been shown to have originally consisted of five books (ii-vi) only, and to contain some inter-

polated cantos even in these. The internal evidence of the poem indicates that it arose in Ayodhyā (Oudh), the capital of the country ruled by the race of Ikshvāku. There is ground for believing that the original part of the *Rāmāyaṇa* was completed before the *Mahābhārata* assumed coherent shape. The balance of the evidence, including the political conditions revealed by the epic, further indicates that the original *Rāmāyaṇa* is pre-Buddhistic. A review of the whole evidence available appears to warrant the conclusion that the original part was composed before 500 B.C., and that the more recent portions were not added till the second century B.C. and later.

Popularity of the Rāmāyaṇa. By the addition of the first and last books the original epic, as composed by Vālmīki, was transformed into a poem intended to glorify Vishnu, of whom Rāma is represented as an incarnation. This identification has secured to the hero of the epic the lasting worship of the Hindus. Nor has any other product of Sanskrit literature enjoyed a greater popularity in India down to the present day. It has been translated into many Indian vernaculars. The most important adaptation is the Hindi version of Tulsī Dās (1532-1623), the greatest poet of mediaeval Hindustān; for with its ideal standard of virtue and purity it is a kind of Bible to nearly a hundred millions of the people of Northern India.

The Drama. The regular Sanskrit play is a combination of lyric stanzas and prose dialogue. The origin of the acted drama is wrapped in obscurity. Its source is, however, indicated with some probability by the indirect testimony of language. The Sanskrit words for actor (*naṭa*) and play (*naṭaka*) are derived from the verb *naṭ*, the Prākṛit or vernacular form of the Sanskrit *nrīṭ*, 'to dance', and familiar to English ears in the form of 'nautch', a kind of ballet-dance performed by women. A rude form of pantomime was thus, in all likelihood, the starting-point. Singing was, doubtless, early added. The next step was the introduction of dialogue. This primitive form is represented by the *Gītagovinda* ('Cowherd in Song'), and a rudimentary type of play called *yātrā*, still surviving in Bengal. The last step was the blending of lyric and dialogue. The best specimens of the Indian drama, numbering nearly a dozen, were written between about

A.D. 400 and 800. They were composed by the great dramatists Kālidāsa and Bhavabhūti, or were attributed by their real authors to their royal patrons Śūdraka and Śrīharsha. The most eminent among these writers is Kālidāsa, famous also as an epic and a lyric poet. *Śakuntalā*, *Vikramorvaśī*, and *Mālavikāgnimitra* are his three dramas.

Fairy tales and fables. The moralizing tone prevalent in classical Sanskrit works is specially prominent in the fairy-tales and fables, into which verses containing ethical reflections and proverbial philosophy are characteristically introduced. A distinguishing feature of this branch of literature is the insertion of a number of different stories within the framework of a single narrative, the process being often repeated by interposing other tales in a secondary story. The Persians and Arabs borrowed this type of narration from the Indians, the best-known instance being, of course, the *Arabian Nights*.

The Pañchatantra. The *Pañchatantra*, so called because divided into five books, is the most important and interesting of this class. It consists mainly of fables, which are written in prose with an admixture of illustrative aphoristic verse. It is impossible to say when this collection first assumed definite shape . . . The work is pervaded by a quaint humour attributing all sorts of human action to the brute creation. Thus animals devote themselves to the study of the Vedas and to the practice of religious rites; they engage in disquisitions about gods, saints, and heroes, or exchange views regarding subtle rules of ethics; suddenly their natural characters break out. With abundant irony and satire various human vices are exposed, such as the hypocrisy and avarice of Brāhmans, the intriguing character of courtiers, and the faithlessness of women. Altogether a sound and healthy view of life prevails, in refreshing contrast to the exaggeration so common in other branches of Indian literature. The *Pañchatantra* has exercised a very far-reaching literary influence. For through the numerous versions derived from the Arabic translation, it became known all over Europe in the Middle Ages as the Fables of Bidpai or Pilpay (from the Sanskrit *vidyā-pati*, or 'chief scholar'). A number of these found their way into the well-known Fables of La Fontaine.

The Hitopadeśa. A similar collection is the *Hitopadeśa*, or 'Salutary Advice', which is one of the most popular works

in India, and is read by nearly all beginners of Sanskrit in England. It is based chiefly on the *Pañchatantra*, in which twenty-five of its forty-three fables occur. The sententious element is here much more prominent than in the older work, the number of verses introduced being often so great as to impede the progress of the prose narrative. These verses, however, abound in wise maxims and fine thoughts. The name of the author of the *Hitopadeśa* is uncertain, and nothing more definite can be said about its date than that it is more than five centuries old.

Mathematics. In the mathematical sciences the achievements of the Indians have been very considerable. As the inventors of the numerical figures with which the whole world reckons, and of the decimal system connected with the use of those figures, they naturally became the greatest calculators of antiquity, just as the Greeks were the greatest geometers. The oldest extant mathematical writings of the Indians are the Vedic Śulva Sūtras, which, as representing a kind of ritual geometry, are altogether of a practical character. They nevertheless display a large amount of geometrical knowledge. Thus the Pythagorean theorem, that the square of the hypotenuse equals the squares of the other two sides of a triangle, is well known to them. The later mathematicians made more progress in trigonometry, especially by the invention of the sine table.

Arithmetic and Algebra. The greatness of the Indian mathematical writers, who belong to the fifth century and later, lies in their arithmetical and algebraical investigations. These, as their authors were at the same time astronomers, form auxiliary chapters in astronomical works. The raising of numbers to various powers and the extraction of the square or cube root, were but elementary operations to these mathematicians. They also calculated mathematical progressions, perhaps first suggested by the chessboard of sixty-four squares, which was known in India long before the beginning of our era. They attained the greatest eminence in algebra, which they developed to a degree beyond anything ever achieved by the Greeks. Strange though it may appear to the European mind, the mathematical chapters of the astronomers are composed in verse, like the rest of their works.

Astronomy. In astronomy the Indians do not seem to

have made much progress till they became acquainted with the science of the Greeks. Thenceforward, however, their astronomical literature is extensive. The earliest works of scientific Indian astronomy, beginning about A.D. 300, were four treatises called *Siddhāntas*, or canonical textbooks, of which only one, the *Sūrya-siddhānta*, has survived. The doctrines of these early works were reduced to a more concise and practical form by the real founder of Indian astronomy, Āryabhata, who was born at Pātaliputra (Patna) in A.D. 476. His work is entitled *Āryabhaṭīya*, the third section treating of mathematical problems only. He will ever be memorable as having maintained the rotation of the earth round its axis, and having explained the cause of the eclipses of the sun and moon. The next great Indian astronomer was Varāha-mihira, a native of a place near Ujjain, who died in A.D. 587. He was the author of four works. Another great astronomer was Brahmagupta, who, born in A.D. 598, wrote his *Brahma-sphuṭa-siddhānta* when he was thirty years old. The last eminent Indian astronomer was Bhāskarāchārya, born in A.D. 1114. He was the author of *Siddhānta-śiromāṇi*, or 'Diadem of Systems', which has enjoyed more authority in India than any other astronomical work except the *Sūrya-siddhānta*.

LESSON 17

THE EARLY HISTORY OF NORTHERN INDIA, FROM 600 B.C. TO A.D. 650

Difficulties of chronology. A great difficulty is placed in the way of the historian by the indifference to chronology displayed by Indian writers, and by their carelessness in distinguishing fact from fiction. During the last hundred years generations of European scholars have been engaged in the task of determining the cardinal facts of Indian chronology, and thus preparing the indispensable framework for historical narrative. But for the discovery of certain clear instances of synchronism between events in India and those in countries of which the history is known, the accomplishment of this task would have been impossible, and the ancient history of

India would still be a chaos of unverified conjecture. But within the last twenty or thirty years most of the leading problems in Indian chronology have been successfully attacked and solved with the aid of these synchronisms; and it is now possible to give an outline of the main facts in chronological order from 600 B.C. to A.D. 650.

Ancient literary traditions. The oldest historical traditions seem to be those embodied in the Jain and Buddhist scriptures, parts of which may have been composed as early as the fifth century B.C. The Purānas of the Brāhmins, although containing much material of high antiquity, were rearranged in their existing form at much later dates. The earliest of them, the Vāyu Purāna, may be assigned to the fourth century A.D., and the other principal compositions of the class may be dated between that time and A.D. 700. All the eighteen Purānas were certainly regarded as works of venerable age when Albirūnī wrote his account of India in A.D. 1031, and the Vāyu Purāna is known to have ranked as a sacred scripture prior to A.D. 600.

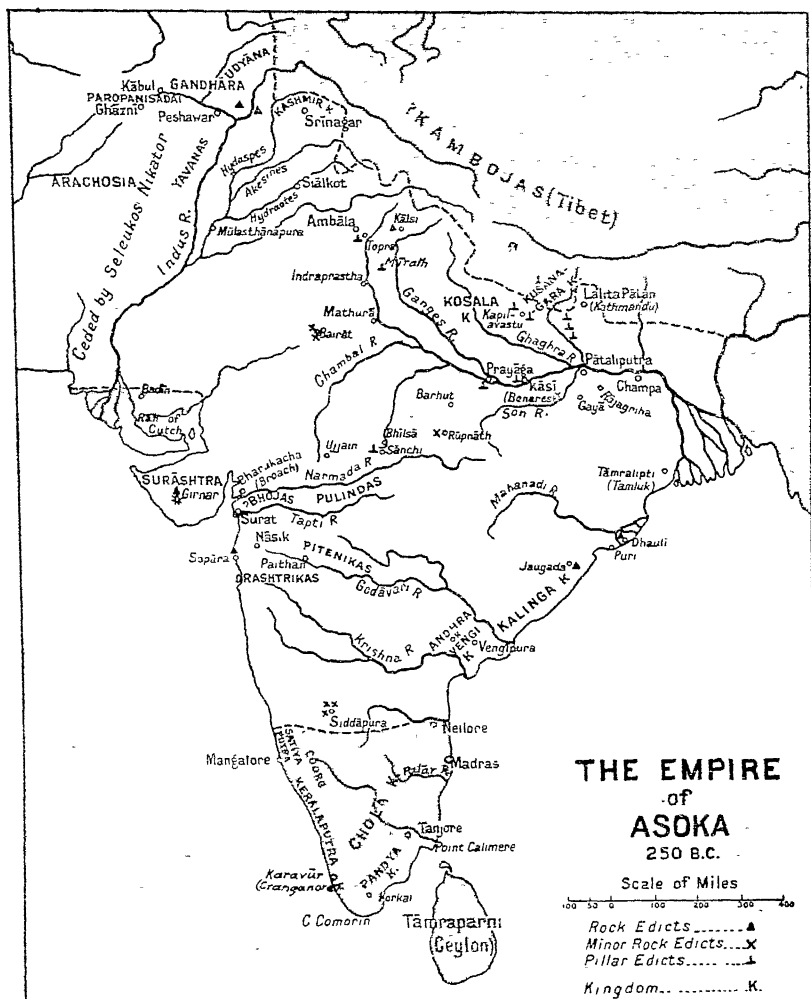
India in the sixth and seventh centuries B.C. The early traditions give us glimpses of India in the sixth and seventh centuries B.C. The country as far as it was occupied by the more advanced tribes, especially those commonly called Aryan, was even then a civilized land, in a condition far removed from barbarism. We hear of sixteen great powers or principal states in Northern India, besides smaller kingdoms and tribal republics. Cities and towns were numerous, and well equipped with the necessities and luxuries of life. Some of the places mentioned in the most ancient stories, such as Benares and Broach (Bharôch), are important cities to this day. Others, famous in the olden time, are now ruinous heaps, and of some the very name and site have been forgotten. Taxila, for instance, which was celebrated as one of the greatest cities of the East in the time of Alexander, was not only the capital of a kingdom two centuries earlier, but a seat of learning, to which scholars of all classes flocked for instruction in every branch of knowledge then within the reach of a student. Its site is now marked by lines of shapeless mounds, scattered among the villages near Rawalpindi. Srāvastī, the splendid city where Buddha lived and taught for many years, lies buried in jungle on the borders of Nepāl.

500 B.C.: *The Indian Satrapy of Persia.* Herodotus, who wrote towards the close of the fifth century B.C., gives the first important notice of India by a foreign observer. He did not visit the country personally, and doubtless derived his information from Persian sources. Darius, the son of Hystaspes (521–485 B.C.), having consolidated his power as master of the Persian empire, sought to extend it over part of India. He annexed to his empire the provinces west of the Indus, and possibly part of the Punjab. At the time of Alexander's invasion the Indus was the boundary between the Persian dominions and independent India. The Indian conquests were organized as the Twentieth Satrapy, the richest and most populous province of the empire. It paid as tribute 360 Euboic talents of gold dust, equivalent to nearly £1,000,000 sterling.

Alexander the Great in India. Alexander's stay in India, from March, 326 B.C., when he crossed the Indus, until September, 325 B.C., when he began his homeward march, lasted barely nineteen months. His expedition, regarded as a series of masterly military operations, had been an unqualified success from beginning to end, without a single failure. Each stage of the campaign—the subjugation of the highlands, the advance to the Hyphasis (Beās), the retreat to the Hydaspes (Jhelum), and the descent of the rivers—had been a triumph of organization, strategy, and tactics. But the world gained nothing to compensate for the awful suffering which accompanied the display of unrivalled powers by the greatest general known to history. Even the booty, for which his soldiers had risked so much, was lost in the deserts of Gedrosia. If Alexander had lived, his well-conceived plans probably would have resulted in the Hellenization of at least the basin of the Indus, and the course of Indian history might have been changed. But his death prevented his victories from bearing fruit in India as they did in other parts of Asia. The ancient Indian polity was far too strong to be swept away by a passing storm; and within two years of Alexander's death his successors were obliged to abandon the Indian provinces, and to leave them to work out their destiny in their own fashion. When fate overtook him at Babylon, his generals had no leisure to think of distant India, where the natives promptly rose and in the course of a year or two swept away all traces of Macedonian rule.

Chandragupta Maurya. The leader of this revolt was a young Hindu, named Chandragupta Maurya, an illegitimate member of the royal family of Magadha (Bihār). Having incurred the displeasure of the king then ruling, he was compelled to go into exile, and fled to the north-west, where he is said to have met Alexander. When the great Macedonian passed away, the exile saw his opportunity, and, placing himself at the head of a force recruited from the predatory tribes of the frontier, descended upon Magadha. In the struggle which ensued Chandragupta was victorious. His accession may be dated with practical certainty in the year 322 or 321 B.C., a year or two after the death of Alexander. His government was characterized by great severity—evasion of the tax-gatherer, for instance, was a capital offence, and intrusion on the royal hunting enclosure was likewise punishable with death. It is not surprising to learn that the sovereign who was constrained to maintain his authority by such cruel punishments lived in daily fear of assassination, and changed his bedroom every night to baffle plots against his life. The imperial dominion extended across India from the Arabian Sea to the Bay of Bengal, and beyond the Indus as far as the Hindu Kush mountains. This vast territory was governed from the capital at Pataliputra, the modern Patna and Bankipore; and so tightly were the reigns of government held in the grasp of the emperor that the sceptre was transmitted to his son and grandson without difficulty or disturbance, so far as is known. The man who could win, administer, and maintain an empire of such magnitude must have been a person of no common ability.

Asoka. When Chandragupta died in 297 B.C., after a brilliant reign of twenty-four years, he was succeeded by his son Bindusāra, who wielded the sceptre for twenty-five years. Bindusāra was succeeded by his son Asoka-var dhana, or Asoka, in the year 272 B.C. By his efforts Buddhism, which had hitherto been a merely local sect in the valley of the Ganges, was transformed into one of the great religions of the world—the greatest, probably, if measured merely by the number of adherents. This is Asoka's claim to be remembered; this it is which makes his reign an epoch, not only in the history of India, but in that of the world. After his death in 232 or 231 B.C. the Maurya empire, which had endured



for ninety years and three generations of kings, crumbled to pieces.

The Gupta dynasty. A new historical epoch is marked by the rise of the Gupta dynasty in A.D. 320. During the decay of the Kushān power the Lichchavis of Northern Bihār, who had been conquered in the olden days by Ajātasatru of Magadha, seem to have extended their power to the south across the Ganges, and to have occupied the ancient capital, Pātaliputra. A local Hindu chief, who bore the honoured name of Chandragupta, married a Lichchavi princess, and on the strength of this alliance became king of Pātaliputra, and laid claim to a paramount position over the neighbouring powers. His success was sufficiently great to warrant him in establishing an era dating from A.D. 320, known as the Gupta era, which continued in use for several centuries. His dominions embraced Northern and Southern Bihār, Oudh, and the valley of the Ganges as far west as Prayāg (Allahābād).

Samudragupta. After a brief reign he transmitted the sceptre to his son Samudragupta, who proved himself one of the most accomplished and energetic monarchs who ever graced an Indian throne. Soon after his accession (about A.D. 330) he conceived the bold design of subduing all India. By operations of extraordinary daring he carried his arms across the jungles of the Vindhyan range, and penetrated far into the Peninsula. Eleven kingdoms of the South were compelled to make submission to the conqueror, who carried off vast treasures.

Chandragupta II. Samudragupta was succeeded in or about A.D. 375 by the son whom he had specially selected as the fittest to govern. This prince was named Chandragupta like his grandfather, and assumed among other titles that of Vikramāditya. He justified by his actions his father's choice, and continued to maintain the reputation of his family for extraordinary ability. Welcome light is thrown upon the character of his internal administration and the condition of the people under his rule by the observations of Fa-hien, the Chinese Buddhist pilgrim, who spent six years (A.D. 406-11) travelling and sojourning in his dominions. The administration of the country was, in the traveller's judgement, mild and equitable. The people were not worried by police regulations, direct taxes, or restrictions on the free-

dom of travelling. The government depended for its income on the land revenue, or crown rent, which was in fixed proportion to the produce. Punishments were lenient, and ordinarily restricted to fines, but an offender guilty of 'repeated rebellion', an expression which probably includes robbery with violence, was liable to lose his right hand. Neither capital punishment nor torture was inflicted. The government officials ('the king's bodyguard and attendants') were paid fixed salaries. No respectable person engaged in hunting or the sale of flesh, these occupations being restricted to the lowest outcasts; and all decent people refrained from eating meat, onions, or garlic, and from drinking intoxicating liquors, so that neither butchers' shops nor taverns were to be seen in the towns. The pilgrim says that cowries were commonly used as the medium of exchange; but the numerous extant coins of various types in gold, silver, and copper, prove that a considerable metallic currency was also in use.

Order was so well maintained that the pilgrim was able to make many journeys in all directions without hindrance, and to spend years of undisturbed study in peaceful monasteries. Endowments held by all sects were scrupulously respected by the sovereign, and the great wealth of the religious communities was efficiently protected. Learning was fostered and encouraged. There is indeed some reason to believe that the golden age of classical Sanskrit literature, erroneously connected by popular tradition with a mythical king Vikramāditya of Ujjain, in 57 B.C., was in reality coincident with the reigns of Samudragupta and his son Chandragupta II, Vikramāditya, in the fourth century A.D. Kālidāsa, the celebrated poet and dramatist, probably flourished during the reign of Chandragupta II, who conquered Ujjain in or about A.D. 390.

Close of the Gupta empire. In A.D. 413 or 414 Kumāragupta (I), surnamed Mahendra, succeeded his father Chandragupta II, and reigned until A.D. 455. Although the events of his reign are not known in detail, it is clear that he maintained the integrity of the empire which he had inherited without serious diminution, though the latter years of his reign were much troubled by the incursions of foreign barbarians (the White Huns of Khwārizm). He was succeeded by his son Skandagupta, towards the close of whose reign,



Phot. Manse.

ALEXANDER THE GREAT. From the bust in the British Museum)

which ended about A.D. 480, the troubles were renewed. With Skandagupta's death the Gupta empire disappeared.

Confusion in the sixth century. The sixth century was, like the third, a period of confusion. The shock of barbaric invasion had dislocated the ancient polity, and all historical unity disappears. A few obscure indications of the existence of sundry petty kingdoms may be traced by means of inscriptions and coins, but a connected history of the time is impossible at present.

The emperor Harsha. With the accession of the emperor Harsha, or Harshavardhana, also known as Silāditya, Indian history regains some degree of unity. This accomplished monarch was the younger son of the king of Thānasar, the Hindu holy land near Ambāla, who had effected considerable conquests over his northern and western neighbours. When this king died (circa A.D. 604), he was succeeded by his elder son, whose reign was cut short by the treachery of Sasānka, king of Eastern Bengal, who invited him to a conference and assassinated him. Harsha then (A.D. 606) ascended the throne, and devoted himself, first to the punishment of his father's murderer, and afterwards to the subjugation of India. For nearly six years he waged incessant warfare, during which time 'the elephants did not put off their housings, nor the soldiers their cuirasses'. The victories gained during this period of strife established Harsha as the undisputed master of Northern India, and justified him in founding an era called after his name, which dates from his accession in A.D. 606.

Hüen Tsiang. The learned pilgrim, Hüen Tsiang, was invited to Harsha's court in 643, and treated with royal honours. He had started from his native country, China, in 629, and, after braving innumerable perils on the way, had reached India by the route passing Lake Issykkul, Balkh, Bāmiān, and Kābul. The years of his sojourn in India had been devoted to the acquisition of a thorough knowledge of the Sanskrit language, and a systematic pilgrimage to all the Buddhist holy places, in the course of which he collected manuscripts and sacred images. Having now completed his self-imposed task, he was preparing to return home with his priceless collections when he was stayed by an imperious invitation from king Harsha, which admitted of no refusal. In due course Hüen Tsiang returned home by the Khotan

route, and devoted the rest of his blameless life to the translation of the scriptures which he had brought from India.

State of India in the seventh century. The observations of Hiuen Tsiang present a picture of India in the seventh century which may be compared with the earlier accounts of Megasthenes and Fa-hien. The judicial system, however defective it may seem to modern eyes, pleased the learned Chinese pilgrim. Criminals or rebels, he observes, were few in number, and only occasionally troublesome. The ordinary punishment was imprisonment, which meant, as now in Tibet, that the prisoners 'are simply left to live or die, and are not wanted among men'. But certain crimes regarded as heinous, including breaches of filial piety, were liable to punishment by amputation of the nose, ears, hands, or feet, or by banishment to the wilds. Minor offences were expiated by fine, which in Fa-hien's time had been considered an adequate penalty for more serious crimes. It would seem that the disorders produced by the barbarian invasions of the fifth and sixth centuries had necessitated greater severity in the penal laws. Torture was not employed to extract evidence, but an absurd system of ordeals by water, fire, poison, or weightment was much favoured as an infallible method of ascertaining the truth. Hiuen Tsiang agreed with his predecessor Fa-hien in judging the taxation to be light and the revenue administration lenient. He noted with satisfaction that every man could keep his worldly goods in peace, and till the ground for his own subsistence. The normal rent of the crown lands was one-sixth of the gross produce. Officials were paid by assignments of land (*jāgir*); and the 'fixed salaries' mentioned by Fa-hien probably meant the same. Labour on public works was duly paid for, compulsory service not being exacted.

Death of Harsha, and after. An epoch is marked by the death in A.D. 648 of Harsha, the last native paramount sovereign of Northern India. He seems to have left no son to succeed him, for the throne was usurped by his minister Arjuna. The land then became a prey to famine and anarchy, and India relapsed into its normal condition as a congeries of petty states engaged in increasing internecine war. About the beginning of the ninth century a new system of Hindu states came into being.

LESSON 18

THE MEDIAEVAL HISTORY OF NORTHERN
INDIA: THE HINDU PERIOD, A.D. 650-1200

General character of the period. The early history of India is a history of the fusion of two alien races, the aboriginal (which was mostly Dravidian) and the Aryan. In the Vedic age they were strongly antagonistic. In the second stage a partial fusion took place, and as this fusion was most apparent in Buddhism, this is sometimes called the Buddhist period. The third stage marks the complete fusion of the two, when the aboriginal element, moulded by the Aryan genius, becomes predominant. It is the age of Neo-Hinduism, dating from the seventh century A.D. The Guptas prepared the way, and the White Huns precipitated the transition. When Harshavardhana died the subject kings were left masterless, and Northern India lapsed into a state of feebleness or anarchy which lasted for three centuries (A.D. 650-950). By the middle of the tenth century a number of stable states emerged, which were most flourishing when the Muhammadan invasion overwhelmed them (A.D. 1192).

Resemblance to the contemporary history of Europe. The history of Northern India at this period presents a close analogy to the contemporary history of Europe. In both countries barbarian invasions ushered in the dark ages; both were occupied with the same problem, the fusion of discordant elements; and in both the foundations of a new society first appear in the tenth century. Moreover, both had the same enemies. The Saracens made themselves masters of Sicily and Spain at the time that the Arabs took possession of Sind and Multān (A.D. 712); and Mahmūd annexed the Western Punjab to the kingdom of Ghazni (A.D. 1021) not very many years before the Seljūks established themselves at Iconium on the frontiers of the Byzantine empire. But despite these resemblances the difference between the two countries was profound. Europe was concerned with Feudalism and the Papacy, India with Neo-Hinduism and the Rājputs. Again, the comparative freedom from external enemies, while normal in Europe, was unique in India. From the sixth

century B.C. to the sixth century A.D. Persians, Macedonians, Indo-Scythians, Parthians, and White Huns had poured into Northern India. But from the seventh to the twelfth century A.D. the country was comparatively free from foreign invasions, and was left—a unique occurrence—to work out its own destiny.

The Rājputs. Between the seventh and tenth centuries A.D. the old racial divisions passed away, and a new division came in, founded upon status and function. But of the older divisions two remained, at least in theory: the Brahman and the Kshattriya. The Aryan Kshattriya had long ceased to be a warrior; he was often a distinguished metaphysician; and according to a popular legend the whole race was exterminated for disputing with the Brahmans. But the theory still held good that to rule was the business of a Kshattriya, and Kshattriya kings were common down to the seventh century A.D., although many of them were probably Sūdra-Kshattriyas, or like the Turki kings of Ohind, not Hindus at all. The place of these Kshattriyas was taken in the Middle Ages by the clans of the Rājputs, or 'sons of kings,' whom the people call Thākurs or 'lords.' The rise of the Rājputs determined the whole political history of the time. Every tribe which exercised sovereign power or local rule for a considerable period joined itself to them. They recognized no title-deeds except their swords, and were constantly seeking for new settlements. They are found everywhere, from the Indus to Bihār, but their original homes were two, Rājputāna and the south of Oudh. They made their first appearance in the eighth and ninth centuries; most of the greater clans took possession of their future seats between A.D. 800 and 850. From Rājputāna they entered the Punjab, and made their way to Kashmīr in the tenth century. About the same time they spread north and east from Southern Oudh, and during the twelfth and thirteenth centuries they made themselves masters of the Central Himālayas.

Origin of the Rājputs. Their origin is a subject of much dispute. None of the Rājput clans are indigenous to the Doāb. Now the kingdom of Kanauj was the most potent of all the kingdoms of Hindustān, and the Doāb was the centre of all Aryan population and culture throughout the Middle Ages. The Rājputs cannot therefore be pure Aryans, and if

we examine the actual origins of the most ancient clans we shall find that they are very mixed. In the Punjab we have reigning Brāhman families which became Rājput. In Oudh, Brāhmans, Bhars, and Ahirs have all contributed to the Rājput clans, but the majority appear to have been Aryanized Sūdras. Of the clans of Rājputāna some—like the Chauhāns, Solankis, and Gahlots—have a foreign origin; others are allied to the Indo-Scythic Jāts and Gūjars; others again represent ancient ruling families with more or less probability. But whatsoever might be their origin, all these clans acquired a certain homogeneity by constant intermarriage and the adoption of common customs. They were all distinguished by their clan feeling, their implicit obedience to their chief while claiming the equality of blood relations, their sense of communal property. They married their daughters into a higher clan, and took their wives from a lower one. They had the same feeling regarding the honour of their women, the same customs of widow-burning, and of the *johar*, the holocaust of females in a beleaguered fort. They all refused to perform the manual work of an agriculturist. It is this code of honour, these common customs, which made them homogeneous and unique. In later days the bards of the Rājputs invented for them many a myth, and invested them with the glory of a descent from Rāma or Krishna.

Period of reconstruction, A.D. 950–1200. By the middle of the tenth century all the bases of Neo-Hinduism, political, social, and religious, had been firmly laid; and, untrammelled from without, it developed its most striking characteristics during the next two hundred and fifty years. The political history of the time revolves around the Rājput clans which stretched from the Rann of Cutch to Rohilkand. The three chief events of the period under consideration are the downfall of the Ponwārs of Mālwa, the capture of Kanauj by the Rāthors, and the short-lived glory of the kingdom of the Chauhāns. The Chauhāns, a very large and powerful Rājput clan, occupied the whole country from Mount Abu to Hissar, and from the Arāvallis to the neighbourhood of Hamīrpur. They were divided into numerous semi-independent communities, but their power centred around the Sāmbhar Lake, and the Sāmbhar kings in the eleventh and twelfth centuries extended their rule over the whole clan, and made Ajmer their

capital. Their last and greatest king was Prithwī Rāj (A.D. 1172-92), the champion of the Hindus against the Muhammadans, and the hero of popular legend.

Prithwī Rāj. His earliest exploit was the abduction of the princess of Kanauj (circa A.D. 1175). His second great exploit was the overthrow of Parmāl, the Chandel king of Mahoba and Kālinjar (A.D. 1182). But the interest of this war rests not so much with Prithwī Rāj as with his opponents, the Banāphar Rājputs, Alha and Udal. Their unjust exile, their return at the bidding of their mother, an Amazonian Ahīrin, and their feats of arms, are the poets' theme. Prithwī Rāj's last and greatest work was the war against the Muhammadan invaders. Brilliantly successful at first, he was completely defeated near Thānesar (A.D. 1192). Both he and his son were slain in the battle: Ajmer was sacked, and Delhi, Budaun, and Baran (Bulandshahr) were taken (A.D. 1193). Prithwī Rāj's rival, Jaichand of Kanauj, did not long escape. Kanauj was stormed, Jaichand was slain or drowned, and within ten years all Northern India except Rājputāna and Gujarāt, had been overrun by the Muhammadans.

Subsequent fortunes of the Rājputs. With the Muhammadan invasion the mediaeval history of the Hindus comes to an end. During the thirteenth and fourteenth centuries the Muhammadans captured, although they failed to keep, every stronghold in Rājputāna, and they established themselves permanently through the rest of Northern India. The 'land was sunk deep in the Turushka sea', and the face of Rājputāna suffered a change. The Gahlots (or Sescdias) of Mewār alone maintained themselves against the Muhammadan invaders, and the repeated capture of their capital, Chitor, served only to increase their fame. The Kachwāhas, when deprived of Gwalior by the Parihārs (A.D. 1129), had formed a refuge among the savage Mīnās, and founded the kingdom of Dhundār with its capital Amber, which ultimately blossomed under the sheltering aegis of the Mughals into the modern states of Jaipur and Alwar. The Baghels had settled at Rewah in the twelfth century; and in the thirteenth century the Bundelās, a degenerate branch of the Gaharwārs, and therefore distant kinsmen of the Rāthors, established a principality at Orchhā and gave their name to Bundelkhand. The Rāthors, driven out of Kanauj, founded a new kingdom

in Mārwar (Jodhpur), which absorbed the neighbouring Bhātis and Chauhāns, and presently rivalled the power of the Gahlots.

In the succeeding centuries Mārwar and Mewar, friends at first and afterwards bitter enemies, were the two leading states of Rājputāna. With the fall of Delhi, Ajmer, and Mahobā, the Chauhāns and Chandels had been scattered over the face of Northern India. They established petty principalities in the Himālayas from Jammu to Almorā; and in the fourteenth century the Hāras, a sept of the Chauhāns, founded the small states of Bundi and Kotah in Southern Rājputāna. The rivalries and wars of the Muhammadan kingdoms of Delhi, Jaunpur, and Gujarāt in the fifteenth century gave the Rājputs a breathing-space and formed the turning-point of their fortunes. It was the golden prime of the Tomars of Gwalior under the famous Mān Singh (A.D. 1486-1518). The great buildings of Chitor and Gwalior date from the fifteenth century, and they are the first Hindu buildings of note erected after the Muhammadan capture of Delhi. With the advent of the Mughals a better age began, and under the wise rule of Akbar the Rājputs once again rose to power, and became leaders and supporters of the empire.

LESSON 19

THE HINDU PERIOD OF SOUTHERN INDIA

The South: its boundaries. Southern India is geographically divided from Northern India by the Vindhya mountains and the Narbadā river. To the south of these, stretching almost across the whole peninsula, is the upland plateau known as the Deccan, separated from the sea on the east by the lower tracts watered by the Godāvari and Krishna (Kistnā) rivers, and on the west by the long strip under the Ghāts known as the Konkan. The Tungabhadra and Krishna rivers form the dividing line of the Deccan, to the south of which lies the country now generally distinguished as Southern India; but for the present historical summary the latter term is held to include the Deccan and all tracts below the Vindhyas and the Narbadā, thus embracing the entire area known of



SOMNATHPUR TEMPLE, MYSORE.

old as the 'South' to the Hindus of the north (Deccan = *dakṣiṇa* = 'southern').

Its people. At some very remote period the aborigines of Southern India were overcome by hordes of Dravidian invaders and driven to the mountains and desert tracts where their descendants are still to be found. At a much later period the Aryans from the north subdued the Dravidians, and established civilized communities governed by powerful kings. These communities probably represented the ancient Dravidian divisions. The earliest known kingdoms of the South were those ruled over by the Pāndyas, Chōlas, and Chēras. They are enumerated in the edicts of Asoka (250 B.C.) and in the ancient Purāṇas. That these were flourishing nationalities is evident from old writings. Thus the Rāmāyana credits Madura, the Pāndyan capital, with the possession of gates adorned with gold and set with jewels. That the Aryans succeeded to distinct Dravidian kingdoms may be shown by the traditionary history of the country, which relates that the first Pāndya king married a daughter of the Aryan Chōla king, thus recognizing that from the earliest days of the Aryan conquest there were at least two Tamil kingdoms. The date of this Aryan conquest is very uncertain; but Dr. R. G. Bhandarkar shows reason for supposing that it took place between the seventh and the fourth century B.C. Probably the earlier period is the more correct.

Its religion. In the matter of religion the mass of the people of Southern India may be said to have been always Dravidian, Aryan Hinduism being a mere veneer. The great temples are of course dedicated to Aryan gods, but the people seldom visit them except on festival days. The religion of their daily life has always been, as it is at the present day, that of their forefathers; namely, worship of local deities and of patron gods and goddesses, with propitiation of demons; praying to the former for temporal blessings, and averting the anger of the latter by sacrifices and offerings. Trees are supposed to be inhabited by demons, and serpent-worship is prevalent. The worship of Siva and Vishnu is practically confined to the upper classes. This has probably always been the case. There was a period, however, when Buddhism exercised a strong influence, and this lasted for about ten centuries, namely, from the second century B.C. to the eighth

or ninth century A.D. During the earlier portion of this period a large number of *stūpas* and monasteries were constructed, some of the latter being cut in the solid rock; while some of the structural *stūpas* (e.g. that at Amarāvati on the Krishna) were of extraordinary magnificence. Jainism also at one time largely prevailed, and a few Jain communities still exist, while Buddhism has completely died out.

In such strongholds of religious thought as Conjeeveram and Madura the Vaishnava Brāhmins are divided into two bitterly opposed sects: *Tadagalaïs*, or northerners, who cling to the Sanskrit version of the Vedas; and *Tengalaïs*, or southerners, who use a Tamil translation. The Lingayat form of Siva worship is largely prevalent in the Kanarese country.

The Dravidian race. Turning to the question of caste, we find that the Brāhmins are, as they have always been since the Aryan conquest, the dominant race; but the educated Sūdras are now pressing them hard. The warrior caste of Kshatriyas is conspicuous by its absence. Among merchants a few leading families claim to be Vaisyas, but on very slender grounds. The population therefore is either Brāhmin, Sūdra, or Pariah (Paraiyan). The Pariahs represent the old Dravidian stock. There is a sprinkling of Muhammadans everywhere, and in some parts they are numerous; but they never established themselves in the Peninsula with such authority as in the Deccan, their wave of conquest having been checked on the line of the Tungabhadra and Krishna rivers by the Vijayanagar kings in the fourteenth century. When at last these were crushed in the sixteenth century the Muhammadans were disunited, and they were again checked by the Marāthās a little later; so that at the present day the country south of the Tungabhadra remains the most purely Hindu portion of all India. The Dravidian temple, with its elaborate sculpture, heavy roofing, and towering *gopuram*, is the result of indigenous growth; and its development can be traced in all its stages, more especially from the seventh century A.D. Numismatic study leads to the same result. The standard in Southern India from an early time was gold, and the external influences which affected the coinage of the Northern kingdoms are scarcely to be traced in the South.

As soldiers. The Dravidian race appears to have been a

Mu'izz-ud-Din holding Deccan Kurram v. Sind; (4) Laknauti practically

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from 1206 to the Mu'izzī 1320; (3) the 1414-51; and divided, the by some pre leading gene to the exter The troubled length of n with the fi 1803, and y every succ thrown each of Delhi, t whereas du 1712), if w deposed, a from father duration.

Eleven
four king

er days. Great honour was done to brave y the number of carved memorial stones e villages, erected to commemorate heroic society is based upon the organization of itary caste. The armies appear to have n the sixteenth century a Portuguese the Vijayanagar king as leading over e field, and his government as based on aidar Ali's army mostly consisted of Dra-years Telingāna, gave its name to the d sepoys, a name which has survived to

earlier times the inhabitants of the coast bold mariners. The Buddhist Jātakas ensive sea-borne trade between the west ern Asia, including Babylon, as far back B.C., while Vedic hymns testify to its till greater antiquity. When the Romans h the Indian Peninsula in the first half- they found a well-established trade carried Gulf and Ceylon. Pliny (Bk. VI) states ssels trading with Ceylon were so large y 3,000 amphorae. On the east coast the a dynasty (roughly 200 B.C. to A.D. 250) of them bearing the device of a two- tly of large size.

LESSON 20

MADAN INDIA (A.D. 637-1803)

The history of Muhammadan India falls e periods: (I) a time of incursions, ending 337-1206); (II) the story of the kingdoms quence of this first conquest (1206-1526); ire of the Mughals, commencing with the quest under Bābar (1526-1803).

AND FINAL CONQUEST (A.D. 637-1206)

amad died in 632, having launched on the hich to this day has not altogether lost its

missionary energy. Islām had become a militant faith even before its founder died; and under his immediate successors its strength as an engine of political conquest was as great as, if not greater than, its success in converting the nations. In a few years Syria, Egypt, and Persia had succumbed to the new rulers and been forced to embrace the new religion.

Mahmūd of Ghaznī. From the first India must have seemed a tempting prey to the aggressive Arabs, but another race, advancing from another direction, was the appointed instrument for the effective conquest of India for the new faith. In the tenth century a Turkish slave of the fifth Samānī ruler of Northern Persia founded a kingdom of his own, fixing his capital at Ghaznī, between Kābul and Kandahār. His fourth successor, Sabuktigīn, consolidated this kingdom and extended its eastern frontier to Peshāwar. This king's son and successor, Mahmūd (born 967; succeeded 998; died 1030), the greatest Muhammadan ruler of his time, began early in his reign a long series of incursions into India, the first in 999, the last in 1025-7, entering India no less than fifteen times in those twenty-eight years.

Permanent absorption of conquered Indian territory does not seem to have presented itself to Mahmūd's mind. Hence his unceasing activity and marvellous success in war did not result in imposing Muhammadan dominion on any part of India, beyond the confines of the comparatively small north-western corner adjoining his own territory. The Punjab seems to have felt his influence most, and it was held henceforth by the Ghaznavī kings as the frontier province of their realm. In the ruin which soon overtook that dynasty, Mahmūd's feeble successors, on the loss of their ancestral capital, moved to Lahore (1160), where they continued to reign obscurely until finally set aside there also (1186) by the Ghori kings, their supplanters at Ghaznī.

The House of Ghor. Mu'izz-ud-dīn Muhammad of Ghor, the country between Ghaznī and Herāt, turned his face towards India in 1176; and before his death thirty years afterwards he had established, by his own efforts and those of his lieutenants, an enduring Muhammadan kingdom in India, extending from Peshāwar to the Bay of Bengal. These Indian conquests were governed through Satraps, mostly Turkish slaves, of whom the four principal at the time of

Mu'izz-ud-din's death in 1206 were (1) Qutb-ud-dīn, Ībak, holding Delhi and Lahore; (2) Tāj-ud-dīn, Īyaldūz, in the Kurram valley; (3) Nāsir-ud-dīn, Qabājah, in Multān and Sind; (4) Muhammad, son of Bakhtyār, a free Khalj Turk, at Laknauti in Bengal. All of these governors now became practically independent sovereigns.

II. MUHAMMADAN KINGDOMS, 1206-1526

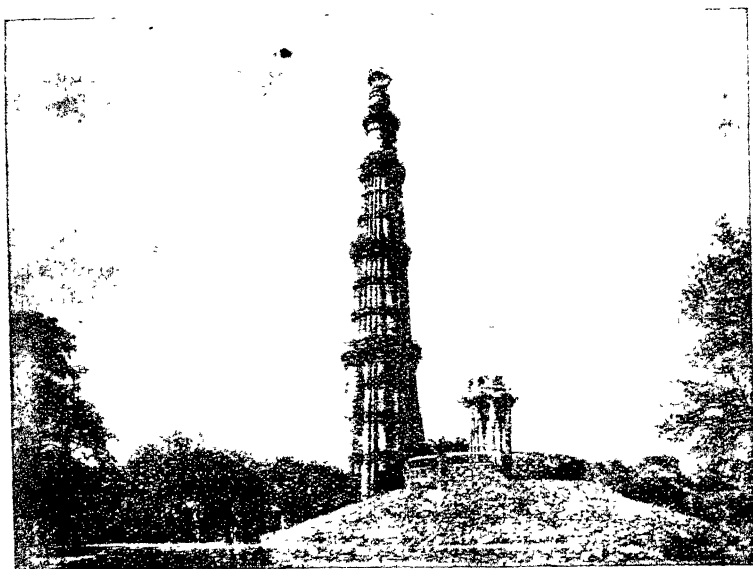
§ A. Northern India—Kings of Delhi

The Kings of Delhi. From the outset the kings of Delhi asserted, and from time to time were able to enforce, suzerainty over the other Muhammadan states of Northern India. This pre-eminence may be attributed to several causes: the ability of Qutb-ud-dīn and his long connexion with India; the central position of Delhi, with its comparative nearness to the border lands, whence the best fighters came; and partly to the prestige of Hindu times, which still clung to the place.

Their five Houses. Thirty-four kings reigned at Delhi from 1206 to 1526; they are divided into five houses: (1) the Mu'izzī Slave kings, 1206-90; (2) the Khaljis, 1290-1320; (3) the Tughlaq Shāhīs, 1320-1413; (4) the Saiyids, 1414-51; and (5) the Lodīs, 1451-1526. But though thus divided, the transfer from one line to another was made either by some pretext of inheritance, or by the election of some leading general. In no case was the succession to power due to the external influence of a new conqueror from the west. The troubled nature of the times is shown by the low average length of nine and a half years for each reign, as compared with the fifteen reigns which cover the years from 1526-1803, and yield an average length of eighteen years. Almost every succession was vigorously contested, and the country thrown each time into confusion. Of the thirty-four kings of Delhi, twelve were deposed, assassinated, or killed in battle; whereas during the vigorous period of the Mughal rule (1526-1712), if we disregard Humāyūn's expulsion, no emperor was deposed, assassinated, or killed in battle, while seven successions from father to son happened, with only two contests of short duration.

Eleven kings of distinction. Of this long line of thirty-four kings, only eleven stand out with any distinctness:

Qutb-ud-dīn, Ībak (1206-10); Shams-ud-dīn, Iyaltimish, his son-in-law and successor (1214-36); Nāsir-ud-dīn Mahmūd Shāh, son of Iyaltimish (1246-66); Ghiyās-ud-dīn, Balban, slave and son-in-law of Iyaltimish (1266-86); Alā-ud-dīn Muhammad Shāh Khaljī (1296-1316); Ghiyās-ud-dīn Tughlaq Shāh (1320-5); Muhammad, son of Tughlaq (1325-51); Fīroz Shāh, nephew of Muhammad (1351-88); Bahlol Lodī



KUTB MINAR.

(1451-89); Sikandar Lodī (1489-1517); and Ibrāhīm Lodī (1517-26).

The Delhi kingdom overthrown. Ibrāhīm Lodī was involved in a dispute with Bābar, king of Kābul, who claimed all the lands in India ever held by the Turks. On April 21, 1526, the contending armies met near Pānīpat, where the Delhi force was utterly defeated and Ibrāhīm himself slain. The conqueror advanced on Delhi and Agra, and the kingdom of Delhi was replaced by what is known to us as the Mogul

(Mughal), but called by the rulers themselves the Gurgūnī Chaghataī, dynasty. We now turn to consider the smaller states which rose and fell in Northern India during this second period (1206–1526).

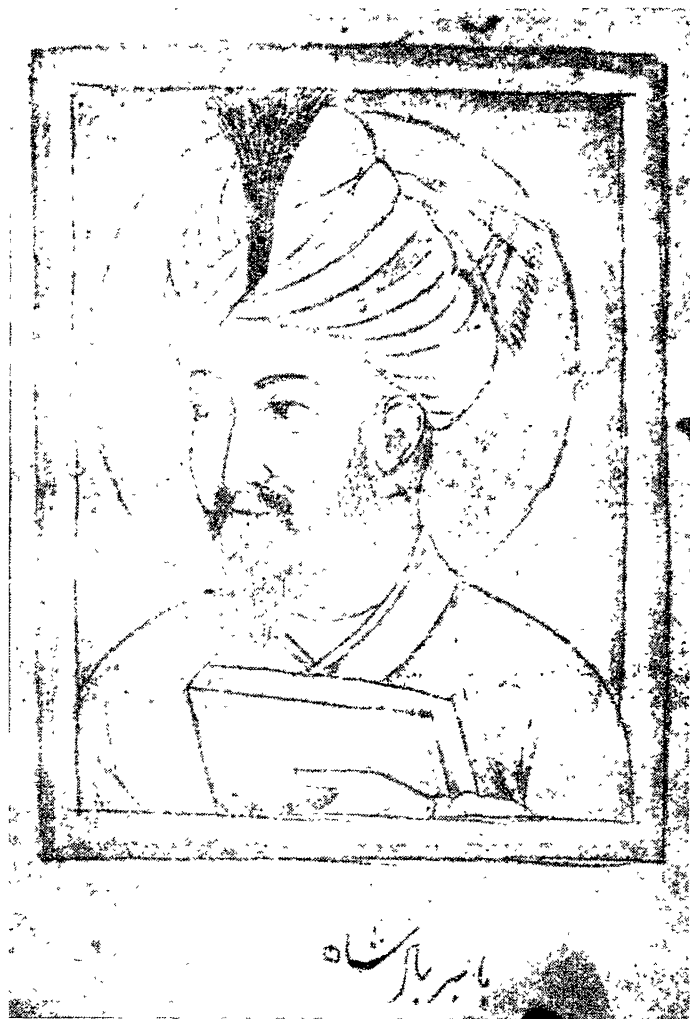
§ B. *Minor Dynasties in Northern India* (1206–1591)

Lahore hardly deserves a place in this category, since it was seldom held for long by any ruler independent of the king of Delhi. Sind, on the other hand, was seldom under the authority of Delhi; most of the time it was held by local rulers. It was ceded to the Mughal emperor, Akbar, in 1592. Multān had a ruler of its own from 1443 to 1525. Almost from the day of its conquest Bengal formed a separate kingdom, and its acknowledgement of the Delhi sovereignty was rarely more than nominal. Its independent sovereignty was extinguished in 1576, when Dāūd Shāh was captured and executed. Kashmir did not fall under Muhammadan domination so quickly as the plains of the Punjab. In 1334 Shāh Mīr, a Persian, revolted against the Rājā and proclaimed himself king under the title of Shams-ud-dīn. In the reign of Sikandar, one of his descendants (1386–1410), the population became almost entirely Muhammadan, as they remain to this day. In 1586 Akbar, then at Attock on the Indus, sent an army into Kashmir and without much difficulty added the valley to the empire. Jaunpur, on the Gumti, was founded by Fīroz Shāh, Tughlaq, about the year 1351. In 1394 Khwāja Jahān declared himself independent, under the title of Sultān-ush-Sharq, or King of the East. The last of the Sharqī kings, Husain Shāh, was deposed in 1476, and fled to Bengal in 1493, when the kingdom was extinguished. Gujarāt, one of the richest and most productive provinces of India, was annexed to the Delhi kingdom in 1196. In 1394 the governor, Zafar Khān, declared himself independent. The kingdom finally came to an end in 1572, when Akbar marched from Delhi to Ahmadābād, and the last king (the fifteenth) formally resigned his crown to that Mughal emperor. In 1401, Dilāwar Khan, governor of Mālwa, declared his independence, establishing his capital at Dhār. In 1531 Mālwa was annexed by Gujarāt. Humāyūn in the year 1535 made a temporary conquest of the province, which was finally surrendered to Akbar in 1564.

§ C. *Southern India*

The first incursion of the Muhammadans into the country south of the Narbadā took place in 1294, when Alā-ud-dīn, Khālījī, marched from Karra on the Ganges, and passing through Bundelkhand reached Deogiri in Khāndesh, returning by a more western route to Delhi. A pause of some ten years followed, when the southward movement was resumed (1305) under Malik Kāfūr. Alā-ud-dīn's general, who carried the standards of Islām, to the very southernmost headland of India opposite Ceylon. At the commencement of the fourteenth century there were three Hindu kingdoms in the South or Deccan: (1) Deogiri in the north-west; (2) Warangal in the north-east; and (3) Dwārasamudra, from which the Ballālas held the remaining southern territory. The power of Deogiri had been already broken by Alā-ud-dīn, and it never recovered its former position. The Ballāla realm was conquered and that of Warangal attacked in 1310-11 by Malik Kāfūr; the latter kingdom succumbing finally to Ulugh Khan in 1322. A new Hindu kingdom arose, however, in the south, of which the capital was at Vijayanagar. This line endured from 1336 to 1565.

Control over the southern conquests could not be long maintained by the Delhi kings. In a short time some revolted officers fixed on an Afghān officer born in Delhi, one Hasan, then bearing the title of Zafar Khān, to be the first king of the Deccan; he was enthroned in 1347, and bore the appellation of Bahman Shah. By the epithet Bahmanī, derived therefrom, the kings of his house are known. From similar causes the rule of Delhi was thrown off by Khāndesh, and the Fārūqī line of kings endured from 1399 to 1599. The Bahmanī power fell into decay in 1482, but was not finally extinguished till 1526, nearly 180 years after the first king's elevation to the throne. During the last forty years or so of this period the kings had no real power, and their dominions had already been divided among five of their officers, who established kingdoms known by the titles of their founders. These kingdoms are: (1) the Ādil Shāhī of Bijāpur (1490-1686); (2) the Nizām Shāhī of Ahmadnagar (1490-1637); (3) the Qutb Shāhī of Golconda (1512-1687); (4) the Imād Shāhī of Ellichpur in Berār (1484-1574-5); and



BĀBAR.

(5) the Barīd Shāhī of Bidar (1492–1609). In 1510 the Portuguese established themselves at Goa on the western coast.

III. THE MUGHAL EMPIRE, 1526–1803

The conquest of India by Bābar at the end of the first quarter of the sixteenth century introduced into the government of the country a succession of strong and vigorous rulers, who by persistent effort brought the whole of India under subjection. These Mughal rulers were, for nearly two hundred years, men of exceptional bodily activity and great force of character, being usually blessed, in addition, with length of days. Up to 1712, all authority remained exclusively in the emperor's hands, and no successful general or palace favourite ever succeeded in pushing them on one side, or seizing the reins of power, as had been so frequent under other dynasties. There were comparatively few disputed successions; those that did arise were soon concluded without having thrown the government into disorder; and, in addition, most of the reigns were of more than usual length. Thus, we have now to describe more than two hundred years of strong government and continuous conquest, of increasing order and tranquillity within the realm. At length, Aurangzeb (1658–1707) had, as it seemed, placed the crowning stone on the edifice of universal empire in India. But already, unnoticed, the seeds of decay had been sown. Natural conditions forbade the rule of one man over such a vast territory, and almost as soon as the empire had stretched itself out nearly to Cape Comorin it began to fall to pieces again. Then commenced a period of rapid decay; weak ruler followed weak ruler, ministers and governors usurped the royal power, the Hindus from the south pressed ever onwards towards Delhi, the Sikh sectaries in the north-west were restless and aggressive, foreign invasion supervened, and the empire of the Mughals, for nearly fifty years before the British army occupied Delhi (1759–1803), had become nothing more than the shadow of a name.

In 1803 the Mughal empire ceased to exist. The blind Shāh Ālam died in 1806 and was succeeded in his barren title, under the terms of the treaty with the British, by his son Akbar Shāh II (died 1837); and he in turn by his son



AKBAR.



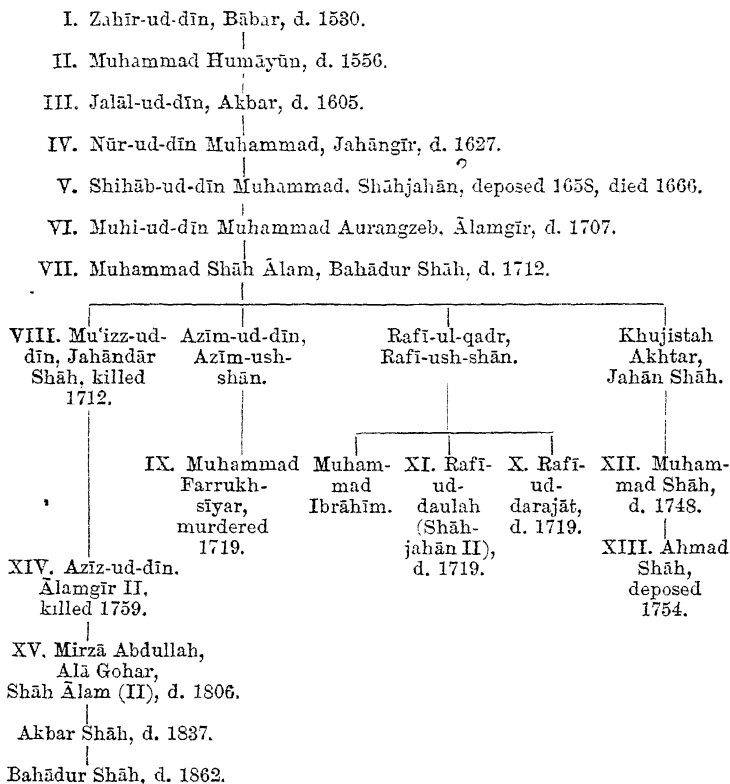
JAHĀNGĪR RECEIVING A PERSIAN EMBASSY.



AURANGZEB.

Bahādur Shāh, who was deported after the Mutiny to Rangoon, and died there in 1862.

CHAGHATĀE GURĠĀNĪS, OR MUGHAL EMPERORS, 1526-1803



LESSON 21. VERNACULAR LITERATURE

The doctrine of bhakti. The Hindu doctrine of Faith (*bhakti*) was originally propounded in the famous Sanskrit work entitled the *Bhagavadgītā*. It was subsequently developed in the *Purānas*, and especially in the *Bhāgavata*. The date and history of its origin in India are unknown. Its essence

consists in the acceptance of the necessity of faith in a personal deity. If we exclude from consideration the religion of some learned Hindus, whose textbooks are written in Sanskrit, the foundation of modern Hinduism consists in a belief in a Trinity—the Supreme Deity, His Incarnation, and His Energetic Power,¹—consecrated by a passionate *bhakti* directed either to the Incarnation or to the Energetic Power conceived as a person.

Vernacular literature essentially religious. More than half the literature of modern India is directly based on this view of religion. It deals with some aspect of the Deity, either with one of his two great incarnations, Rāma and Kṛishṇa, or with Śiva and his energetic power under the form of Durgā. Four-fifths of the rest consists either of commentaries or of treatises on the art of poetry, all of which are ancillary to the purely religious literature. Only the small remainder is definitely secular.

Humble origin of many vernacular writers. It is noteworthy that many of the vernacular writers, including those who have exercised the greatest influence on the development of the Hindu character, were men in the humblest ranks of life, as contrasted with Sanskrit writers like Kālidāsa, Bhavabhūti, or Śankara, who were Brāhmans and lived at the courts of kings. The greatest of all the moderns, Tulsī Dās, although a Brāhman by caste, was abandoned by his parents at birth, and was picked up and educated by a wandering ascetic. Kabīr was a weaver, and Dādū a humble cotton-carder. Nāmdēv, the founder of Marāṭhā poetry, was a tailor, and his most famous successor, Tukārām, a struggling Śūdra shop-keeper. Tiruvalluvar, the brightest star in the South-Indian firmament, was a Pariah, the lowest of the low; and Vēmana, the most admired of Telugu writers, was an untaught peasant.

Poetry and prose. Indian vernacular literature is divided as to periods by a sharp line coinciding roughly with the commencement of the nineteenth century. The earlier period was the age of poetry, and the later that in which prose first found general employment. In the age of poetry prose was almost unknown, except as a vehicle for commentaries and the like. Even these were often in metre, for every author wrote

¹ This is the true Trinity of Hinduism—not the oft-quoted Brahmā, Vishnu, and Śiva.

most naturally in verse. While this verse was always elegant and musical, prose, for want of practice, was awkward and involved. The general employment of prose in the vernacular was due to English influence and to the need for elementary reading-books for the younger servants of the Company. The first writers advanced with difficulty, but a century of practice has given facility and a confident sense of progress. The vernacular prose of the present day is very different from that of a century ago, though, strange to say, few Europeans are aware of the fact, and we find textbooks still in use for Government examinations which were written in the days of the Marquis Wellesley.

(1) *Rāma-literature.* *Tulsī Dās.* The literature dealing with Rāma had its origin in the twelfth century in Southern India. Rāmānuja, its founder, came from Conjeeveram. Early in the fifteenth century Rāmānanda was one of the prominent members of the sect which Rāmānuja founded. Seventh in descent from Rāmānanda, in succession of master and pupil, came Tulsī Dās (1532-1623). The first thing to be noted about him is his success. India has had many reformers, but none, except perhaps the Buddha, has been adopted as a religious teacher by so many professed followers. Kabīr's and Dādū's adherents may be numbered by hundreds of thousands, but to-day at least ninety millions of the people of Upper India acknowledge Tulsī Dās as their guide. One of the greatest reformers and one of the greatest poets that India has produced, he disdained to found a church, and contented himself with telling his fellow countrymen how to work out each his own salvation amongst his own kith and kin. All forms of religion, all beliefs and all forms of non-belief in the ordinary polytheism of the many Hindu cults, were to him but so many accidents beside the great truths on which he was never weary of laying stress.

Tulsī Dās conveyed his teaching through the medium of some of the most beautiful poetry which has found birth in Asia. In Eastern Hindī he had at his disposal a language flexible in its form, copious in its vocabulary, and musical in its tones, which he wielded with a master's hand. His best known work, the religious epic known as the *Rāma-charit-mānasa*, the 'Lake of the Gestes of Rāma', is no mere translation of Vālmiki's Sanskrit *Rāmāyana* dealing with the

same course of events, but is quite independent in its treatment. Tulsī Dās was not a mere ascetic. He was a man that had lived. He appealed not to scholars, but to the voiceless millions of his native country—the people that he knew. He had lived with them, begged from them, prayed with them, taught them, shared their yearnings, proved their happiness. No wonder that such a man, who was also a rare poet and an enthusiastic reformer, at once sane and clean, was taken for its own by the multitude which lived under the sway of nature and in daily contact with her secrets. ‘Here,’ cried they, ‘is a great soul that knows us. Let us choose him for our guide.’

Besides his epic, eleven other works can, with some certainty, be attributed to Tulsī Dās. Most of them cover either the same ground or a portion of it. His doctrines have been preached with enthusiasm and have been almost universally accepted in Hindustān. But he has had no imitators. Looking back along the vista of centuries we see his noble figure, unapproached and solitary in his niche in the Temple of Fame, shining in his own pure radiance as the guide and saviour of Hindustān. When we compare the religious and moral atmosphere of his country with that of other regions of India in which Rāma-worship has no hold, and not till then, can we justly estimate his importance. His influence on literature has been equally great. Since his time all the epic poetry of Upper India has been written in Eastern Hindī.

(2) *Kṛishṇa-literature*. The acceptance of Kṛishṇa as a deity is as old as the Sanskrit *Mahābhārata*. It is strongly inculcated in the tenth book of the *Bhāgavata Purāna*, and has been wedded to immortal verse in the Indian Song of Songs, the *Gīta-gōvinda* of Jayadēva; but it did not become a systematized form of popular religion till it was preached by a Telinga Brāhman, settled near Mathurā (Muttar), named Vallabhāchārya, in the early part of the sixteenth century. His son-in-law was Chaitanya, the founder of the allied sect in Bengal. While the literature of Rāma is mostly epic, that of Kṛishṇa is nearly entirely lyric—a species of composition in which the Indian genius easily exhibits a high degree of excellence. In Upper India the most famous of Vallabhāchārya’s successors was Sūr Dās, the blind bard of Agra. He wrote in the Braj Bhāshā dialect of Western Hindī, and

his language is considered to be the purest specimen of that form of speech. According to native tradition, he and Tulsī Dās have between them exhausted every possibility of poetic form, and all subsequent writers can be but copyists or imitators. Sūr Dās had many successors, the most famous of whom was Bihārī Lāl of Jaipur, whose *Satsaigyā*, or collection of seven hundred detached verses, is one of the daintiest pieces of art in any Indian language.

Eastern Hindī, the language of Tulsī Dās, can hardly be said to possess a Krishna-literature; but in Bihārī there was Vidyāpati, one of the oldest of its poets, who achieved great success in the art of writing short lyrics on the subject. He flourished in the latter half of the fifteenth century. Chaitanya was ever quoting them, and he thus fixed the shape of all the poetry on this subject in Bengal. Chandi Dās was a contemporary and friend of Vidyāpati, and wrote similar verse in Bengali. In Marāṭhī Krishna-literature, the most celebrated author is Tukārām or Tukōbā, a man of the Śūdra caste, who was born in 1608. In Tamil the most important work of the kind is the great hymnology, the *Nālāyira-prabandham*, some of the contents of which are said to date from the twelfth century; but in this language Krishna-literature does not take the same important position as elsewhere. On the other hand, in Kanarese there are numerous works connected with this form of worship. In Telugu, a translation of the *Bhāgavata* by Bammara Pōtarāja is a classic.

(3) *Śiva-literature*. The *bhakti*-literature inspired by the worship of Śiva and his queen Durgā has received its highest cultivation in Southern India and Bengal. The worship of Śiva in the Tamil country found its earliest literary expression in the *Tiru-vāsagam*, or 'Holy Word' of Mānikka Vāsagar, who lived in the eleventh century. In the fifteenth and sixteenth centuries the vernacular literature of Bengal was devoted to Krishna, but for the next 250 years its chief theme was Durgā, usually under the name of Kālī or Chandi. The earliest and greatest of these writers was Mukunda Rām Chakravartī (seventeenth century), commonly known as Kabi Kankan, or the Jewel of Bards.

LESSON 22. THE MARĀTHĀS

The eighteenth century is the formative period in the history of modern India. It witnessed the break-up of the Mughal empire, and the firm establishment of British supremacy. It also witnessed the one successful attempt on the part of the Hindus to drive back the tide of Muhammadan invasion. This result was accomplished, not by the Rājputs or any other military caste in the north, but by the peasant population of the Deccan, who had been stimulated into a race of soldiers by the example of their national hero, Sivājī.

The home of the Marāthās. The word Marāthā is scarcely an ethnical or even a caste name. In modern usage, it is confined to the superior class from whom Sivājī's generals and warriors were mostly drawn, and who sometimes claim a Kshatriya origin. In a wider sense, it may be extended to include all who speak Marāthī as their mother tongue and inhabit Mahārāshtra. The central home of the Marāthās is the neighbourhood of the Western Ghāts, eastward from Bombay. Here are thickly scattered the hill-fortresses which determined Sivājī's original strategy. Here are the mountains that bred the hardy footmen; here are the river valleys that provided the no less hardy horses for his distant forays. Here is Poona, the home of his boyhood and afterwards the capital of the Peshwās. Here also is Sātāra, the royal residence and prison of his descendants.

Sivājī, 1627-80. Sivājī Bhonsla was born in 1627, at Shivner, the hill-fort of Junnar, within the dominions of Ahmadnagar, and was brought up at Poona, in his paternal *jagīr*, while his father was conquering new territory for Bijāpur in the Carnatic. From a boy he cherished the ambition of founding a Hindu kingdom upon the ruins of the local Muhammadan dynasties that were manifestly decaying. Gathering round him a party of hill-men from the Ghāts, known as Māwalis, he seized fort after fort, and was soon able to measure his strength against a Bijāpur army, whose general, Afzal Khān, he seized at a friendly conference (1659). A few years later he raided as far north as Gujarāt, and sacked the imperial city of Surat (1664). This brought down upon him the wrath of Aurangzeb, who sent an army

to crush him. After more than one brilliant feat of arms, Sivājī surrendered on terms, and went to Delhi to pay homage to the Mughal emperor (1666). Being coldly received and placed under restraint, he managed to escape and return to the Deccan, where he quickly re-established his power. In 1674 he found himself strong enough to assume the title of Rājā and the insignia of royalty, being enthroned with great pomp at his hill-fort of Raigarh. So secure was he that he now proceeded with a large force into the Carnatic, to establish his claim to the *jāgirs* which his father had acquired in Mysore, though Tanjore was resigned to a younger brother. He died at Raigarh in 1680.

Sivājī not only founded a kingdom; he also created a nation, as is shown by the course of events in the Deccan after his death. Aurangzeb came in person to give the final blow to the two moribund kingdoms of Bijāpur and Golconda, and to suppress the Marāthā revolt. The former object he accomplished with ease; to the latter he devoted twenty years in vain.

Existing Marāthā States. There still exist three great Marāthā States, but it is significant that none of the three lies within Mahārāshtra. The Gaikwār of Baroda—who never drew sword against the British—preserves the territory which his ancestors conquered in Gujarāt, and also the tribute which they exacted from numerous surrounding chiefs. Sindhia, with his capital at Gwalior on the border of Hindustān and a second capital at the ancient Ujjain, maintains the traditions of his race as premier chief in Central India and Honorary Colonel in the British Army. Holkar of Indore rules over a choice portion of the fertile valley of the Nerbādā, in Mālwa. In the Deccan, the line of Sivājī is represented, through successive adoptions, by the Mahārāja of Kolhāpur; and many a Sardār and Jagīrdār boasts a title that is famous in Marāthā history. Farther south, the principality of Tanjore, founded by a younger brother of Sivājī, was extinguished in 1799; but the petty Madras State of Sandūr still belongs to a descendant of the Ghorpade family, whose ancestor first acquired it in the service of the Bijāpur Sultāns.

PART III. ECONOMIC

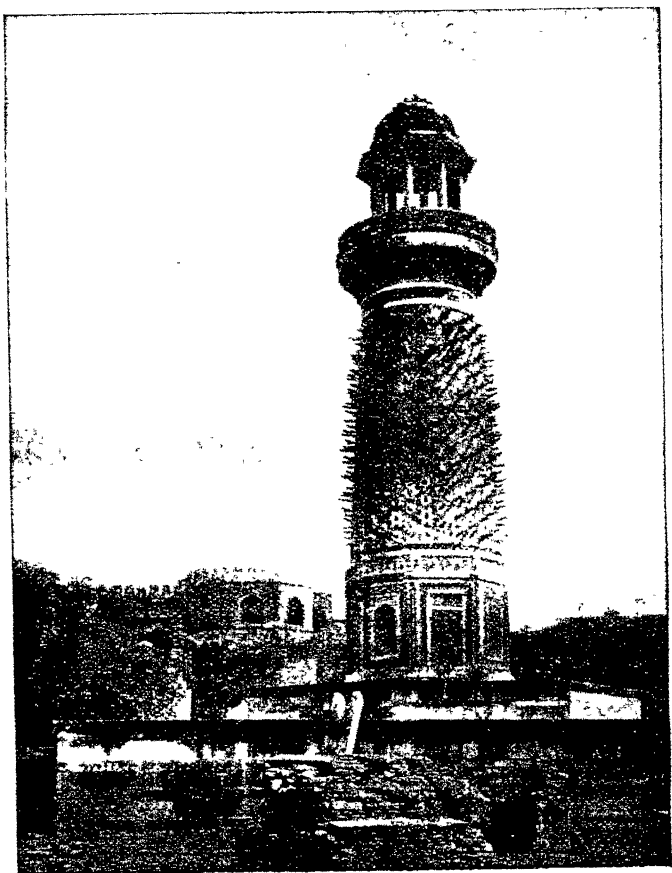
LESSON 23. AGRICULTURE

Land available in sparsely populated tracts. There is still plenty of land in India for the whole of the rural people. Good agricultural dry-crop land lies waste, notably in Central India and the Central Provinces, because there are not enough people or cattle for cultivation. In other parts (particularly in the Deccan), with a climate at least equally precarious, cultivation has extended from the best to the very poorest descriptions of soil. The cultivators of these poorer soils make only a bare living in favourable seasons, and, with their dependants, flock to relief works in famine years. Agricultural labourers migrate from Bengal and the Central Provinces to Assam, from the United Provinces to Bengal, from Madras and Chittagong to Burma; and, outside of India, to Ceylon, Mauritius, South Africa, British Guiana, and other colonies in search of agricultural or other employment. But, speaking generally, migration or emigration has worked hitherto on such a small scale in India as a whole that little relief has been given to either congested or sparsely populated districts. The movement between different parts of India is usually of a temporary nature, and does not involve a permanent change of residence. A great deal of land in the Punjab and Sind has, however, been brought under canal irrigation within recent years, and has been colonized by people from thickly inhabited tracts. There is evidence that this migration will increase with the future extension of canals in the Punjab.

Two harvests—the kharif and the rabi. The cultivation of the staple crops in different districts is to some extent determined by the character of the soil, but to a greater extent by rainfall and other climatic conditions, such as deposition of dew, temperature during the growing seasons, and dampness in the air. There are two main harvests—the *kharif* and the *rabi*. The agricultural year may be further divided into four periods, viz.: June to October, corresponding

roughly with the period of the south-west monsoon proper; November and December, months of the retreating south-west monsoon; the cold-weather months of January and February; and the hot-weather months from March to May. Each period is not, however, strictly confined to the months named. The sowing of *kharif* (autumn) crops begins with the first rains of the south-west monsoon, usually in June, and in normal seasons extends well into July. The various *kharif* crops are reaped between September and December. *Rabi* (spring) crops differ in kind from the *kharif* crops, and require less rainfall, but in the north of India they derive great benefit from dew. They are sown usually in October and November, and ripen in March and April. During their period of growth they are subject to a considerable degree of cold, which limits the choice of staples. The difference in character between *kharif* and *rabi* crops is most marked where, as in Northern India, there are great variations in temperature at different seasons of the year. In Madras, where the climate is marked by more regular and continuous warmth, these distinctions largely disappear, and there are only early and late sowings of the same crops.

General efficiency of the peasant as cultivator. Throughout India the soils, the seasons, the local conditions, and agricultural practices vary in an extraordinary degree. The variety of ordinary field and garden crops is greater than in any other country in the world. Crops are normally sown and harvested in various parts in every month of the year, and, generally speaking, the inherited experience of generations enables the ryots to cultivate their small holdings very skilfully. 'At his best,' says Dr. Voeleker in his *Report on the Improvement of Indian Agriculture*, 'the Indian ryot or cultivator is quite as good as, and in some respects the superior of, the average British farmer, while at his worst it can only be said that this state is brought about largely by an absence of facilities for improvement which is probably unequalled in any other country; and that the ryot will struggle on patiently and uncomplainingly in the face of difficulties in a way that no one else would. . . . The native, though he may be slow in taking up an improvement, will not hesitate to adopt it if he is convinced that it constitutes a better plan and one to his advantage.'



ELEPHANT TOWER (FATEHPUR-SIKRI).

There are, however, good and bad farmers in India just as in other countries. Hereditary skill in cultivation is not nearly so developed in some castes as in others; thus Rājputs, Brāhmans, and Kolis are, generally speaking, inferior as cultivators to Jāts, Kūrmīs, and Kāchīs. In places the ordinary cultivation is indifferent and wasteful; and, speaking generally, farming in some parts of India, as in Gujarāt, is much more advanced than in others, e.g. the Central Provinces. It follows that a hopeful field for improvement lies in the interchange between districts or Provinces of superior indigenous methods, implements, or varieties of crops. In particular parts of India cultivation of the very highest order exists which is associated with irrigation from wells. If the depth of water is considerable, the cost of lifting it is high, and therefore only good crops will pay. In Bombay and Madras, and generally throughout Peninsular India, the principles of manuring and rotation, and the need of thorough tillage, are perfectly understood and practised on the scattered areas under well-irrigation. Crops are taken in rapid succession, the land being usually double-cropped each year. Indigenous implements and water-lifts of cheap primitive construction are used. They are entirely suitable to this garden cultivation, which, especially in parts of Gujarāt, cannot, in respect of neatness and thoroughness, be excelled by the best gardeners or best farmers in any other part of the world. Cultivation of this sort will spread by the force of good example; but, requiring, as it does, a large amount of capital for extra labour, cattle, manure, and other contingent expenses, it must always be small in extent in comparison with the more ordinary cultivation which, in the different Provinces, is carried out with infinite variety of detail.

Soils. In respect of different geological types of soil, India exhibits far less variation than England; still the main varieties of soil are so numerous that it is beyond the scope of this chapter to classify and describe them. An effort will be made, however, to indicate the broader differences characterizing the chief kinds obtained from the three principal geological formations.

(1) *Alluvial tracts.* The alluvial tracts are the most extensive, and agriculturally the most important. They occupy the greater portions of Sind, Gujarāt, Rājputāna, the Punjab, the

United Provinces, Bengal, and the Godāvāri, Kistna. and Tanjore Districts of Madras, besides extensive tracts in Assam and Burma. An alluvial strip of varying width extends along the eastern and western coasts of the Peninsula, widening at the deltas of the great rivers, and reaching irregularly into the valleys of the Eastern and Western Ghāts. Rich alluvial soils fringe the courses of the great rivers of Peninsular India in many places. The alluvial soil of the Kistna and Godāvāri deltas is a dark-coloured loam. In the Indo-Gangetic plains the colour of the surface soil may be any shade between light fawn and brown. In certain cases injurious salts of soda and magnesia accumulate, which appear as an efflorescence (*reh*) on the surface of the sterile soil. Soils in Bengal are distinctly lighter in colour and denser than those in North-western India. With moderate and well-distributed rainfall the alluvial soils of the Indo-Gangetic plains are capable of growing a great variety of *kharif* and *rabi* crops, for the depth of soil secures great fertility.

(2) *The trap soils.* The Deccan trap formation, which extends over about 200,000 square miles, covers the greater portion of the Bombay Presidency, the whole of Berār, the western third of the Central Provinces, and the western half of Hyderābād. On the slopes and uplands of the lower trap hills the soils are thin and poor. The disintegrated trap furnishes a light-coloured sandy or gravelly soil, which is moderately productive only in years of favourable rainfall. The lowlands in the broken country have deeper and darker-coloured soils, which are constantly improved by washings from the higher levels. True black cotton soil occurs within the area of the Deccan trap in undulating or sloping situations, below the general level of the foot-hills. In places in the valleys of the Tāpti, the Nerbādā, the Godāvāri, and the Kistna heavy black soil is often 20 feet in depth. Black cotton soil is also found in the valleys of streams and rivers outside the area of the Deccan trap. The chief Districts in which it predominates are Surat and Broach in Bombay, and Bellary, Kurnool, and Cuddapah in Madras. Pure black cotton soil is generally known as *regar*.

(3) *Soils of the crystalline tracts.* The gneiss schists, &c., of what is known as the crystalline tract occupy the whole of Peninsular India outside the areas of Deccan trap and alluvium

already referred to. There is also a long strip of similar formation along the east of Lower Burma. In Mysore and Madras the soils are chiefly light-coloured, thin, and stony on the arid uplands, where they produce the poorest of crops; but the red or red-brown loams and clay loams of the lower levels are very fertile. The soils from this formation in Bombay, in the west of the Belgaum, Dhārwar, and North Kanara Districts, are ordinarily clay-like in consistence and yellow-red or reddish-brown in colour. The poorest soils are those which are lightest coloured. Rice is the chief crop on the lower-lying terraced and embanked fields.

Defective seed selection. The cultivator has much to learn in regard to the selection and change of seeds. This is largely due to economic conditions, which place the poorer peasants in a state of dependence on the money-lender, who is generally also a grain-dealer. He takes over the greater portion of the produce of the land, either in payment of debt or as an ordinary purchaser, sells the best produce for consumption or export, and issues the unsold portion, which is necessarily inferior for seed. A like deleterious effect is produced by the practice which prevails in some localities of ginning cotton at steam-power factories, where the seeds of various varieties are mixed and are handed back in this condition to the cultivators. The distribution of good seeds is one of the functions of the Government farms.

Manures. The chief obstacle to the improvement of Indian agriculture is the need of manure. Water and manure together, says Dr. Voelcker, represent in brief the ryot's main wants. The chief supplies are derived from the dung of farm animals, the litter of cattle sheds, and household waste. The urine of farm animals, which weight for weight is as valuable a fertilizer as dung, is in most parts of the country entirely wasted, while the dung is largely burnt as fuel. In the larger villages and in the towns there is special waste. The cattle used for traffic, the milch cattle, horses, &c., are all fed on concentrated food produced by agriculture, yet little of their manure goes back to the land. We may deplore the loss by burning, but it is inevitable where wood is not available. The consumption of dung as fuel lends special importance to the policy adopted by Government of reserving and controlling areas where a supply of firewood may be looked for in the future, and in the forests

under state control timber and minor produce are granted free, or at reduced rates, to the people resident in the vicinity. The manure which could be obtained from towns would, if freely utilized, help Indian agriculture very materially. Sanitation is improving, and town sweepings and night-soil are now used as manures to a larger extent than was formerly the case. The husbandman is becoming more alive to the utilization of available supplies of manurial matter.

Rotation of crops. The practice of regular rotation of crops is followed in many parts of India. The ryot knows that the fertility of his field cannot be maintained at a high standard if the same crop is taken too often in consecutive years; and he knows, too, which crops are particularly exhausting and which exercise an ameliorating influence on the soil. The staple crops are regulated by local conditions of soil and climate, and the rotations that are possible are similarly determined as the result of experience. Local conditions are so variable, and the cultivated crops so numerous, that it would be difficult to specify typical rotations representing wide areas.

Mixed crops. The common Indian system of growing mixed crops serves in many respects the purposes of rotation. It is undoubtedly a successful and profitable method, which has done more to uphold the fertility of Indian soils than any other practice. There are very good reasons why it is profitable to grow pulses, oilseeds, and fibre plants mixed with, or subordinate to, cereals like *jowār*, *bājra*, or wheat. Owing to the variability of the seasons the Indian cultivator is at sowing time most uncertain as to harvest prospects, and experience proves that the risk of total failure in an unfavourable year is minimized by growing a mixed crop. If the pulse fails the cereal may succeed, and vice versa. Pulse crops, whether grown alone or in combination with other crops, exercise another beneficial influence in that they enrich the soil with nitrogen, of which element Indian soils require a frequently renewed supply. The common growth of these pulses is a testimony to the fundamental soundness of the traditional agricultural practice of the country. No pulse crop cultivated in India exercises such a general fertilizing effect as *arhar* (pigeon-pea). It is grown in every Province mixed with other crops; its long tap-root enables it to withstand drought and to search in the sub-soil for plant food; it spreads out and grows freely after the

cereal, to which it is subordinate, has been harvested; and nearly all the leaves fall as the plants ripen, thus enriching the surface soil.

Principal crops. The more important field and garden crops cultivated in India are set forth in detail in the Table at the end of this chapter.

Cattle. In western countries cattle are bred principally for milk and meat production: in India cows are kept chiefly to produce work cattle, and milk is largely obtained from buffaloes. Camels are employed for tillage to some extent in Northern India, but in the country as a whole agricultural operations and also the transport of goods by road mainly depend upon the draught power of bullocks and male buffaloes. There are numerous breeds of cattle, which differ to a remarkable extent in size, type, and other respects. Nearly all the large pure breeds have homogeneous colouring, the prevailing tints being white and grey. In areas where little attention is given to breeding the colours are variable, and spotted cattle abound. In the north-east of Madras hornless cattle are fairly common; elsewhere all cattle are horned. The characteristic hump is better developed in some breeds than in others, but is prominent in all. Bullocks which are suited for slow and heavy work are shaped differently from those adapted to quick and light labour.

A very considerable proportion of the cattle are old and decrepit, and are therefore useless for breeding or for work, but are maintained owing to the sanctity of the cow among the Hindus and their general disinclination to take life. These useless cattle are the first to succumb during periods of scarcity and famine. In the deltaic areas, and in the rice tracts generally, the cattle are miserably weak. Grazing lands are limited, or totally wanting, and the only fodder available in any quantity is rice straw, which provides little nourishment. Little or no concentrated food is given even to the working cattle in busy seasons.

Dairying on European principles. Dairying on European principles was practised in India to a moderate extent in 1890. It has since extended very considerably under Government supervision. The Bombay Agricultural department gave an impetus to the industry by establishing a dairy farm, by securing the services of an expert from Sweden, and by orga-

nizing demonstrations of improved methods. The expert was transferred to the Agricultural department of the United Provinces, and was subsequently allowed to purchase the Government dairy farm opened near Aligarh. It was soon found that good butter was readily saleable at much higher rates than the common country product, *ghî*. It was also shown that in the larger towns and cantonments there is a large demand at high rates for milk from cows or buffaloes which are properly fed and milked in sanitary surroundings. Dairy-machinery is admitted duty free in India. Separators, churns, and butter-workers have been imported in large numbers. Half the butter exported goes to Ceylon, while *ghî* is largely sent to the Straits Settlements, Natal, Aden, and British East Africa, for the consumption of Indian emigrants.

Agricultural credit. Generally speaking, the agriculture of India is in the hands of small men, and the capital required for the cultivation of the soil is supplied in small sums by small capitalists to men of small commercial intelligence. The peasant in India, as in most other agricultural countries, works on borrowed capital; and the question whether he is more or less indebted than his compeer in other countries is open to discussion, but there can be no doubt that in certain parts of India at least the indebtedness of the peasant is economically excessive. This feature of the agricultural situation is largely the product of the last half-century. On the one hand, the land, which is the peasant's ultimate security, has risen immensely in value under British rule, and the peasant has been tempted by the enhancement of his security to plunge into unnecessary debt. On the other hand, the increase in the value of the security has had little or no effect on the price of the capital supplied, and the money-lender has utilized the commercial helplessness of the uneducated peasants and their increasing competition for loans to maintain rates of interest which tend to make the business of agriculture impossible. On the one hand there is excessively wide credit, on the other excessively dear money; and the agriculture of India has suffered equally from the one and from the other.

Excess of credit. The excess of credit has its basis in the fact that land which formerly had little or no market value, under the light assessments and the enforced peace of British rule,

acquired a value which renders it a transferable commodity, and in some parts of the country the land itself has passed largely into the hands of the money-lending class. This transfer of the land to a class which has, as a rule, no sympathy with agriculture and merely speculates on quick returns, has contributed not only to the discontent of the peasantry, but also to the impoverishment of the soil; and the Government has in some parts of India decided that the only means to save the country from these evils is the drastic measure of curtailing the peasant's right to raise money on his land. It is intended by such measures to leave in the peasant's hands all the credit needed to maintain a profitable agriculture, while at the same time cutting off the further credit which tempts him to extravagant borrowing for purposes unconnected with his cultivation, and ultimately deprives him of his property in the land.

Credit societies. The further danger to agriculture, which lies in the dearth of money, is largely the consequence of the fact that from time immemorial the small village banker has had the monopoly of supplying money to the agriculturist. It is recognized that under existing social conditions no better agency than the village money-lender is possible, but so long as he requires immensely high rates of interest other agencies should also be open to the agriculturist. The Government has endeavoured to supply this want, both by lending money itself (known as *takāvi*), and by encouraging the peasants to form credit associations of a co-operative character. Facilities have been given, by an Act of 1904, for the formation of co-operative credit societies based on the Raiffeisen plan so successful in Central Europe, and encouragement has been afforded by the state in several ways towards the formation of such societies. Further plans for providing cheap money have from time to time received, and are still receiving, the attention of Government, but up to the present the bulk of the agricultural capital is supplied by local money-lenders under conditions prejudicial to development.

PRINCIPAL CROPS CULTIVATED IN INDIA.

English Name	Vernacular Name in Hindustāni.	English Name.	Vernacular Name in Hindustāni.
<i>Cereals.</i>		<i>Irrigated Garden Crops.</i>	
Rice . . .	Dhān.	Sugar-cane . .	Ukh or Ikh.
Wheat . . .	Gehūn.	Ginger . . .	Adrak or Sonth.
Great millet . .	Juār [jowār]. [Tami]. Cholam.]	Turmeric . . .	Haldi.
Bulrush or spiked millet . .	Bājra. [Panu, Cam- bu.]	Elephant foot Kacha . . .	Zaminkand. Ghuiyān.
Barley . . .	Jau.	Sweet potato . .	Shakarkand.
Oats . . .	Jai.	Yam . . .	Rafālu.
Maize . . .	Makka or Makai. Mandū or Mauā. [In Bombay, Nāgh; in Mysore and Mad- ras, Rāgi.]	Potato . . .	Alu.
		Brinjāl . . .	Bāingan.
		Chillies . . .	Mirch.
		Onion . . .	Pyāz.
		Garlic . . .	Lahsan.
Small millers . .	Baṭi (Bombay) Chenā, Vari (Bombay). Sāwān	Carrot . . .	Gājar.
		Radish . . .	Mūli.
		<i>Fibre Plants.</i>	
		Cotton . . .	Paril ban, Kapās.
Italian millet . .	Baṭi (Bombay). Kakun.	Jute . . .	Pāt (Beng.).
		Bombay hemp . .	San, Sanai.
		Deccan or roselle hemp.	Pātsan.
<i>Pulses.</i>		<i>Foodier Crops.</i>	
Gram . . .	Chana.	Lucerne . . .	—
Horse gram . .	Khulāt.	Guinea grass . .	—
Pigeon-pea . .	Aṭhar. [In Bombay. Tur.]	Senji . . .	—
Chickling vetch .	Kisāri.	<i>Drugs, Narcotics, and Dyes.</i>	
Indian bean . .	Sam.	Tobacco . . .	Tambāku or Surti
Cluster bean . .	Guār.	Poppy . . .	Posta.
Kidney bean . .	Moth.	Indian hemp . .	Bhang.
Black gram . .	Urd or Māsh.	Pepper . . .	Kālī mirch.
Green gram . .	Mūng.	Betel palm . . .	Supāri.
Cow-pea . . .	Lobia.	Betel leaf . . .	Pān.
Lentil . . .	Masūr.	Cardamom . . .	Bari ilaichi.
Peas . . .	Matar.	Tea . . .	Chā.
		Coffee . . .	Bun.
		Cinchona . . .	—
		Indigo . . .	Nil.
<i>Oilseeds.</i>			
Linseed . . .	Alsi.		
Sesamum or gin- gelly . . .	Til.		
Safflower . . .	Kusum, Bai re.		
Niger-seed . . .	Kālā til.		
Ground-nut . .	Mūngphali.		
Castor-oil plant .	Arind or Rendi.		
Rape or mustard	Sarson, Lāhi.		



SEATED BUDDHA, SÄRNÄTH.

of a regular water-supply may be replaced by the tempestuous action of sudden floods until such time as man, with the aid of costly appliances, intervenes to restore equilibrium.

Value of forests to the state. Forests in India have therefore a value to the state far in excess of their mere financial profits. The grazing which they annually afford to countless herds assumes a special value in years of drought, when it renders material assistance in saving from starvation the cattle upon which the agriculture of the country depends. They afford to the villagers who inhabit their vicinity a ready supply of material for house-building and thatching, of fuel, and of minor forest products, which add substantially to the comforts of their life. And the use of forest leaves as manure for the cultivator's fields has already assumed large dimensions, and is steadily spreading as the increasing pressure of population renders agricultural practice more intensive.

Departmental classification of forests. The forests under the direct control of the state are classified as (1) 'Reserved', (2) 'Protected', and (3) 'Unclassed' or 'Public' forest land. The Reserves are forests intended to be maintained permanently for the supply of timber, fuel, and other produce, or for the protection of the water-supply or other similar reasons. The Protected forests may be either in a state of transition to Reserves or intended to remain permanently in the second class. In the former case it has been found necessary to prohibit within these areas certain acts harmful to the forest until such time as careful examination permits of a decision whether more stringent rules shall be enforced; in the latter, the object in view has been to provide for the more beneficial exercise of rights by local communities. The Unclassed or Public forest lands are those given over with even fewer restrictions (in some cases to the extent of exemption from the operation of forest law) for the use of the public. Out of the 208,369 square miles under state management in 1901, 88,140 square miles had been reserved, 10,488 were protected, and the remaining 109,741 were unclassified.

Indian forest law. The basis on which Indian forest law proceeds is that all uncultivated tracts in which private rights have not been acquired, either by the individual or by a local community, are the property of the state. With the growth of population it became impossible to continue the ancient

system by which each man took from the jungle all that he required, to a great extent without supervision and in many cases free of charge. The first Indian Forest Act was passed in 1865. Statistics setting forth the results of the application of forest law and regulations are interesting, as showing the protection these afford against petty depredations or more serious attempts to injure or appropriate state property. Considering the extent of Indian forests and the ease of evading detection, it may be said that the commission of only one offence annually in each four square miles of area goes to prove that forest law does not press hardly on the people.

Protection from fire and cattle. The protection of the forest area from fire is one of the most important and arduous duties of the Forest officer. In carrying out this policy of protection the difficulty arises that the customs of the country are in direct opposition to it. From time immemorial fire has been, in the hands of uncivilized man, the most powerful agent in destroying the permanent vegetation of the country with a view to obtaining more readily food for himself and his cattle. And even in those areas where there is no necessity to continue the struggle with the exhausted forest, this ancestral weapon is still employed, though it be but to clear a few acres of waste or to isolate an insignificant patch of shifting cultivation, at the risk of destroying the adjoining forests. The Indian forester has therefore to uproot old and introduce new habits, and his efforts in this direction must be gradual and adapted to the slow absorption of novel ideas by the peasantry of the East. On the other hand, he has rarely to combat popular ill-will. Incendiarism is uncommon, and may often be traced to some petty malice against an individual or community. The protection of the forests from cattle is a matter of less difficulty, though hardly of less importance. It should be noted that in times of famine the ordinary restrictions on grazing are often relaxed.

Yield of the forests. The out-turn from the forests of India is for the sake of convenience generally classified under (1) Timber, including fuel; (2) Bamboos; and (3) Minor Produce, including grass and grazing, besides all those numerous products found or manufactured in a forest. Of the timbers the most important are teak, deodār, sāl, sissu, ebony and rosewood, blackwood, cutch, sandal, babūl, red sanders,

ironwood, and padauk. There are hundreds of other species possessing admirable technical qualities; but few of these have any value save for local consumption, being as yet unrecognized by trade, or not occurring in sufficient quantities to secure for them a permanent footing in industries that could utilize them. Inquiries instituted into the economic possibilities of Indian forests are gradually bringing to notice the value of new products and directing attention to others heretofore only locally utilized; while the efforts made towards the improvement and protection of the forests are resulting in a larger out-turn of those products for which there is already an assured market.

Forest tribes. In the creation of state forests the forester, first as an explorer and then as a pioneer, finds his sphere of action in advance of the wave of civilization caused by increased prosperity in the more settled lands. In his preparations for the requirements of the future he comes in contact with forest tribes who, whether timid or ferocious, simple or cunning, all possess the common characteristic of viewing with intense jealousy any interference with the habits and customs of their primitive life. To them, though perhaps they only dimly realize it, the advance of civilization must mean either extinction or absorption into a population possessing a stronger vitality. The policy of the Government of India is to permit no sudden imposition of restrictions that may alter the accustomed mode of life of these tribes, but rather to win confidence by kindness, and thus gradually to create self-supporting communities, acknowledging the state as arbitrator of those questions hitherto decided by might rather than by justice. It is in the manner of giving effect to this policy that the success of the inauguration of forest conservancy often depends; for here, even more than in the comparatively civilized parts of the Empire, the work of the Forest department can only commence with the acquiescence of the inhabitants, and only progress with their assistance.

LESSON 25. MINES AND MINERALS

The development of Indian minerals. The feature which stands out most prominently in a survey of the mineral

industries of India is the fact that practically nothing has been done to develop those minerals which are essential to modern metallurgical and chemical industries, while most striking progress has been made during recent years in opening out deposits from which products are obtained suitable for export, or for consumption in the country by what may conveniently be called direct processes.

Decline of ancient chemical industries. In this respect India of to-day stands in contrast to the India of a century ago. The European chemist, armed with cheap supplies of sulphuric acid and alkali, and aided by low sea freights and increased facilities for internal distribution by the spreading network of railways, has been enabled to stamp out, in all but remote localities, the once flourishing native manufactures of alum, the various alkaline compounds, blue vitriol, copperas, copper, lead, steel and iron, and seriously to curtail the export trade in nitre and borax. The high quality of the native-made iron, the early anticipation of the processes now employed in Europe for the manufacture of high-class steels, and the artistic products in copper and brass gave the country a prominent position in the ancient metallurgical world; while, as a chief source of nitre, India held a position of peculiar importance until, less than forty years ago, the chemical manufacturer of Europe found, among his by-products, cheaper and more effective compounds for the manufacture of explosives.

Increase in mineral imports. With the spread of railways, the development of manufactures connected with jute, cotton, and paper, and the gradually extending use of electricity, the demand for metallurgical and chemical products in India has steadily grown. Before long the stage must be reached at which the variety and quantity of products required, but now imported, will satisfy the conditions necessary for the local production of those which can be economically manufactured only for the supply of groups of industries.

Value of imports. During the three years 1901-3 the annual value of the imports into India of minerals and products directly obtained from minerals averaged £10,158,252; and this is exclusive of glassware, earthenware, porcelain, hardware, cutlery, machinery, millwork, and railway plant, of which the value is, of course, very much greater than that

of the materials from which they are manufactured. The chief items among imported mineral products are the metals, which, during the three years mentioned, had an average value of £5,500,000 sterling, without counting the value of the metals used in imported machinery, railway plant, and hardware. Iron and steel constitute 37 per cent. and copper 10·7 per cent. of the total, while the other valuable articles are mineral oil 24·2 per cent., precious stones and pearls 8·2 per cent., and salt 4·4 per cent.

Classification of the valuable minerals. The valuable minerals produced in India may be grouped as follows:—

1. *Carbon and its compounds*, including coal, petroleum, amber, and graphite.

2. *Metalliferous minerals*, including the ores of gold, silver, tin, copper, zinc, lead, antimony, iron, manganese, chromium, nickel, cobalt, tungsten, titanium, and aluminium.

3. *Materials for construction*, including building and ornamental stone, slate, lime, cement, brick-clay, and sand.

4. *Minerals used in various industries*, such as abrasive materials, mineral pigments, refractory materials and materials used for pottery, for other indigenous industrial arts, for agriculture, and for the chemical industries.

5. *Gem-stones.* The only precious and semi-precious stones at present mined in India are the diamond, ruby, sapphire, spinel, tourmaline, garnet, rock-crystal, and the various chalcidonic forms of silica, jadeite, and amber. For turquoise India is merely the channel through which the mineral obtained beyond the northern and north-western frontier is distributed. Notwithstanding the reputation (stretching back as far as Ptolemy in the European, and farther in the Hindu, classics) which India enjoys as a diamond-producing country, the output of to-day is very small and comparatively unimportant.

LESSON 26. ARTS AND MANUFACTURES

The communities employed. The communities concerned in the arts and manufactures of India may be grouped as follows, according as they are engaged in—

(1) Rural industries, directly associated with agriculture or agricultural produce.



THE BODHISATTVA MAÑJŪSRĪ.

(2) Manufacturing and urban occupations—the textile industries proper.

(3) Sylvan occupations—the collection or utilization of natural or wild products.

(4) Occupations connected with mines and metals.

Under each of these four groups both skilled and unskilled labour find their place. The wild products assume in India a greater importance than in most countries, on account of their aggregate value, and also because of the employment they afford to the poorer communities of the inhospitable tracts in which they are, for the most part, found.

Distribution of industries. India may be divided into five great industrial areas: Bengal and Assam; Northern India (the United and Central Provinces, Rājputāna and Central India, the Punjab and the Frontier Province, and Kashmīr); Western India (Bombay Presidency, Berār, and Baluchistān); Southern India (Madras Presidency, Hyderābād, Mysore, and Coorg); and Burma. The large number of commercial products and the poverty of artistic manufactures in Bengal, the small number of important and characteristic materials and crafts in Western India, and the comparative abundance of these in Southern India are significant features. In Burma the artistic crafts are more numerous, and in some respects more important, than the commercial products. In Northern India, too, where external commerce is of less consequence than in the maritime provinces, there may be said to be almost a superabundance of artistic industries.

Classification of industries. In the Indian Museum at Calcutta, economic products, with the manufactures derived from them, have been arranged under nine classes; each of the following sections will deal with one of these classes, and with the arts and industries derived therefrom.

I. INDUSTRIES DERIVED FROM GUMS, RESINS, OLEO-RESINS, INSPISSATED SAPS, &c.

The articles thrown into this class might almost be spoken of as derived from the vegetable kingdom, though a few, including some of great importance, such as lac and wax, are animal products. There is a fairly large industry in refining camphor and in the assortment of the imported gums. Fully one-third of these imports are again exported. The finer

qualities of cutch, catechu, and gambier are regularly chewed along with betel-leaf in the preparation known as *pān*. The darker coloured and coarser qualities, such as the cutch of Pegu, are largely employed as dyes and tans, especially for fishing-lines and nets.

Lac industry. The restriction of the words 'lac' and 'lacquer' to denote two closely allied yet in many respects widely dissimilar industries is convenient, even if it be not quite justifiable etymologically. The material used in the former is the resinous extract derived from an insect, and the latter is a natural vegetable varnish. The lac industry is confined to India; but there are two great centres of lacquering, Japan and Burma. Lac yields two products—a rich deep-red dye and a resin perhaps best known in sealing-wax. In India it enters into the agricultural, commercial, artistic, manufacturing, and domestic doings of the people to an extent hardly appreciated by the ordinary observer.

Wax and its uses. Bee-culture is not an important industry in India, though it might easily and most advantageously be made so. In consequence, the collection of honey and wax is usually one of the minor forest occupations, farmed out to jungle or hill tribes. Beeswax is exported from India in fairly large quantities, but the traffic does not expand. The most artistic use of wax in India is in its special application to the dyers' art. Beeswax is used to protect portions of the fabric from receiving the dye which is applied to the exposed surfaces, and by repeated alternations of waxing and dyeing the most varied and effective results are obtained. It is much to be regretted that this beautiful craft has for some years given tokens of decay, owing to the demand for cheaper printed goods.

II. INDUSTRIES DERIVED FROM OILSEEDS, OILS, FATS, AND PERFUMERY.

The materials and industries which fall under this section are mainly of agricultural interest. Some conception of their total value to India may be gathered from a study of the imports and exports. In 1900-1 these were collectively valued at 11 crores and in 1903-4 at 17 crores. Oils may be primarily classed as fixed and as volatile (essential), and each of these may be subdivided into animal, vegetable, and mineral.

Dyers and leather-workers all use oil, and have done so from the remotest antiquity. One of the most important uses of this article is the anointment of the person with sweet oils. Crude soap is largely manufactured and sold to washermen and dyers, and latterly soap manufacture on European methods has been successfully introduced. Crude 'tallow dips' are produced here and there all over the country, but the bulk of the candles used are imported from Europe. Within the last few years, however, a formidable rival to this import traffic has arisen through the manufacture of candles in Burma from wax procured in the refinement of petroleum, and through the production of similar articles at Calcutta from imported wax and paraffin.

Oilseeds and Oils. There is a large export of oilseeds from India, the principal heads being linseed, sesamum or gingelly, rape, cotton-seed, castor-seed, ground-nuts, coco-nuts, and poppy seed. It is satisfactory to note that the local production of oil from these seeds is making progress. The growing popularity of kerosene and other mineral oils must have curtailed the manufacture of many of the minor oils, more especially those formerly grown for illumination and lubrication.

Painting. Indian painting may be broadly divided into three distinct styles—the Buddhist, exemplified by the wall-frescoes in the caves of Ajanta; the Muhammadan, as shown by the book illustrations and portraits of the Mughal artists, which their successors carry on to this day; and the modern style of oil and water-colour painting as practised in the Schools of Art. The first mentioned is decorative rather than pictorial; the earliest true pictures of which we have any record are the productions, under Persian influence, of the old Mughal artists. The process of painting by which these works are executed is known as 'body-colour', that is water-colour mixed with white, which gives them a solidity or 'body'. From this style of painting grew the art of miniature-painting, which is carried to a considerable degree of excellence at Delhi. These miniatures are usually executed on ivory.

III. INDUSTRIES CONNECTED WITH DYES AND TANS.

Dyeing. While the record of most departments of Indian commerce and industry is one of continuous prosperity, the

history of dyeing is one of decline. The influence of the modern mineral dyes has been more destructive to the tinctorial and textile industries of India than is commonly supposed. These cheap colours have injured the artistic feelings of the people and demoralized many of the indigenous crafts. The delicacy and harmony of colour which formerly characterized Indian fabrics have given place to brilliant, if not gaudy and discordant, tints, while the reputation of these fabrics for durability of colour has at the same time been undermined. One of the most pressing modern dangers lies in the fact that there are good and bad qualities of aniline and alizarine, and that their cheapness promotes the use of the inferior kinds. A still greater danger exists in the dyed textiles that are yearly pouring into India from foreign countries. These have given the Indian craftsman models in vulgarity that may take a century or more to efface.

Trade in dyes and tans. An inspection of the official returns of foreign trade in dyes and tans reveals some striking facts. The total imports were, in 1903-4, valued at 98 lakhs, or more than seven times as much as those of 1876-7, while the exports were valued at 176 lakhs, or about one-half of those of 1876-7. This very serious loss to Indian commerce and agriculture may be said to represent the complete destruction of the safflower or *kusum*, the *āl* plant, and the lac-dye industries, and the serious decline that has taken place in that of indigo. The falling off in the exports of indigo and lac-dye has been continuous and rapid. Not many years ago lac-dye might have been said to represent the profit of the lac factory ; at the present day the manufacturer's greatest difficulty is to discover a convenient way of getting rid of this now useless by-product.

Dye-works. In every direction the native dyer is far behind his Western rival. It is no matter for surprise, therefore, that departures from the ancient methods and conditions of the dyer's art have been found unavoidable in response to modern demands. The growth of cotton and other steam-power weaving has accordingly, within recent years, given birth to large dye-works on European models.

IV. INDUSTRIAL PRODUCTS DERIVED FROM THE
ANIMAL KINGDOM.

Leather. By far the most important product of this class is leather. The traffic in hides and skins is in fact one of the staples of Indian export. The undressed skins of full-grown bovine animals are usually called 'hides', while those of calves, sheep, and goats are known as 'skins'. The exports have increased in a very much higher ratio than the imports, a circumstance that would appear, in some measure at least, to be due to the improvements effected in local manufacture. It is probable that the local manufactures in skins and leather in India are fully as valuable as the foreign transactions in these commodities. The curing, and to a smaller extent the tanning, of skins is practically confined to Southern India, and the exports are conveyed mainly to the United States.

Tanneries. In 1903 there were forty-three tanneries in India with 7,900 employés. Of these tanneries thirty-seven were in the Madras Presidency. The tanneries of Northern India, especially those at Cawnpore, produce leather, and are, moreover, very largely engaged in the saddlery, boot and shoe, and leather trunk trades. They also supply a proportion of the leather that is used by village saddlers and shoemakers. India possesses an extensive series of very excellent tanning materials, such as acacia pods and bark, cutch, Indian sumach, tanner's cassia, mangroves, myrabolams, and others. Attempts are now being made in the Madras Presidency to introduce chrome tanning.

Ivory. India is very largely dependent on foreign countries for its supplies of ivory. African ivory is closer in grain, and not so liable to turn yellow, or to warp and split, as the Indian. 'Green' ivory is much better than 'dead'; the latter term denotes ivory found on the ground, or stored so long that it has lost all its gelatine and become brittle and non-elastic. All the finer and more expensive ivory-carvings are, as a rule, done on the best African ivory; and even in inlaying, the hair-lines are invariably in the bluish white African article, the larger patches being in the dull chalky Indian quality. It is a curious fact that the armouries of the Indian princes contain a large number of daggers, the hafts



KANISHKA'S CASKET (A.D. 100).

of which are made of fossil walrus ivories. Some of these weapons have histories that go back for centuries; and the traffic in conveying these special forms of ivory from Siberia, or even from Greenland, to India, mostly by tedious land routes, must have existed long anterior to the present channels of commerce. Five localities are specially noted for their artistic ivories, namely, Delhi, Murshidābād, Mysore, Travancore, and Moulmein.

V. FIBRES, TEXTILES AND TEXTILE INDUSTRIES.

Classification of materials. After food-stuffs, no other group of products or industries is of such importance to India as that of textiles. Of the Indian vegetable fibres, cotton and jute are by far the most valuable. They are followed by coir, aloe, hemp, and paper-making materials, and then by rope, cordage, brush-making, mat-making and basket-work fibres. Flax (linen) is chiefly of interest as an imported article; and though much has been written about reha or China grass, it is, so far as India is concerned, a curiosity more than a regular article of trade. There are perhaps 300 fibre-yielding plants in India; and of these about 100 are more or less regularly used by the people, but only ten or twelve are established articles of trade. Of the animal fibres, silk, wool, *pashm*, and hair are very important.

Cotton history. The enormous importance of cotton fibre in the agriculture and commerce of the world at the present day renders it difficult to believe that only a few hundred years ago this, the most valuable of all fibres, was almost unknown to the civilized nations of the West. No less surprising is it that cotton, which has for many centuries been the staple article of clothing of the people of India and other Eastern countries, should scarcely find a place in their early literature. For it may safely be concluded that in India the arts of cotton-spinning and cotton-weaving were in a high state of proficiency two thousand years ago. Cotton-weaving was only introduced into England in the seventeenth century, and in 1721 an Act was passed prohibiting, in the interests of Manchester, the importation of printed calicoes from India. It may also be mentioned that in 1784 a ship arrived at Liverpool with eight bags of cotton from the United States, which were seized on the ground that so much cotton could

not have been produced there. Soon after this the whole aspect of the cotton trade of the world had changed, and India then fell into a position of very secondary importance. Instead of furnishing Europe with cotton goods she now became dependent on England for her own supplies, a remarkable instance of the triumph of improved mechanical contrivance and intelligent agriculture over hereditary skill and primitive traditions.

Cotton mills. The dawn of India's second life in the cotton industries broke with the establishment of the first steam-power spinning and weaving factory; and, as in Europe, that new life meant the gradual annihilation of hand-loom weaving and the concentration of the weavers in the larger towns. Steam factories have sprung into existence all over India. It has been estimated that at present £13,500,000 sterling is invested in the cotton mills of India, and that they give employment, directly or indirectly, to 350,000 persons. The first cotton mill in India was started in 1818, near Calcutta; the first of the Bombay series was established in 1851. In 1903-4 there were 204 mills, with 46,000 looms and 5,213,000 spindles: of the mills eighty-four are in Bombay city and thirty-two in Ahmadābād.

Silk history. Many conflicting opinions have been advanced on the history of the silk industry of India. It is probably correct that the most ancient references to silk by Sanskrit authors denote one or other of the non-domesticated worms, and not the true silkworm (the mulberry-feeding insect) of modern commerce. All the passages that speak of the mulberry-worm in early Hindu literature refer to an imported, and not to a locally produced, silk. Neither this worm nor the plant on which it feeds has ever been found in an indigenous condition in India—certainly never in the parts of India where sericulture exists. The practical silence of Muhammadan writers on the subject is also significant, and tends to the conclusion that until the advent of the East India Company mulberry silk-growing was nowhere an important industry in India. Under the fostering care of the Company, however, the Indian silk trade prospered greatly, and the experiments then conducted resulted in the introduction and adaptation of at least some of the sub-tropical races of the silkworm now met with in Bengal.

Silk trade. The caprice of fashion has, from time to time, powerfully modified the Indian silk trade. The special properties of the *korah* silks were formerly much appreciated, but the demand for them has now declined. This circumstance, together with defective systems of rearing and of hand-reeling and weaving, accounts largely for the present depression in the mulberry silk trade of India. Bengal is the chief producing Province of India, while Burma and the Punjab use the largest quantities of silk. Bombay imports its supplies from China, and distributes raw silk thus obtained to Northern and Central India. Three large silk mills (two in Bombay and one in Calcutta) are worked by steam-power, and are almost exclusively concerned with the Burmese market, a trade that was formerly concentrated very largely in Glasgow but is now shared by Japan. There are also some twenty to thirty hand-loom factories, mostly in Bengal. In both raw silk and silk manufactures India now receives far more than she gives. Not only is she failing to produce silk goods suitable for the demands of other countries, but she is opening her markets to a foreign competition that must tell disastrously on the local hand-loom workers.

Wool and pashm. The earliest classic writers of India knew of wool, which was assigned as the material for the sacred thread of the Vaisya caste. Wool, however, takes a very subordinate position in the art crafts of the plains of India, owing largely to its unsuitableness as a material of clothing under the climatic conditions. The wool of the Indian sheep is very inferior to that of Europe and Australia. *Pashm* or *pan* is the undercoat of wool found on certain goats in Tibet. This is the article employed in the manufacture of Kashmīr shawls (*shāl's*), Rampur *chādars*, and *pashmīna* cloth. Of late years a soft form of wool has been imported from Kermān in Persia. More recently a similar wool has come from Australia and other countries, and later still a soft staple has been produced by special treatment of almost any wool. These and similar substitutes for the true *pashm* are imported into Bombay and carried to Amritsar, Lahore, Nūrpur, Ludhiāna, and even to Kashmīr itself, and, either in their pure state or mixed with a small amount of Tibetan *pashm*, are made into shawls, &c., and then sold all over India, and even exported to Europe and America, as true *pashmīna*.

The name 'cashmere' is also given to cloth woven in Europe, and has in fact become a trade term for a certain quality of fine soft woollen goods.

Woollen manufactures. Woollen manufactures consist of coarsely woven or felted blankets and piece-goods, only occasionally ornamental. It is only in Northern India (more especially in Kashmīr) that the spinning and weaving of wool extends to the production of highly finished and artistic goods. It may be mentioned that there are at present only six steam-power woollen mills in India: namely at Cawnpore, Dhāriwāl in the Punjab, Bombay (3), and Bangalore. For all the higher-class goods they have to import Australian wool, which is used either pure or mixed with Indian wools. Scattered here and there all over the country are various hand-loom factories where coarse blankets, carpets, rugs, *pathi*, and *pashmina* are produced. Pile carpet-weaving as now practised in India was introduced, like many other arts, from Persia; but it is probable that India had a carpet industry of its own (though possibly not in pile carpets) long before the advent of Persian influence. The great centre of shawl production is Kashmīr.

Embroidery. Embroidery is in its inception a pastoral art. It attains its highest development in Northern and North-western India, and is more frequently found among the inhabitants of the hills than among those of the plains.

LESSON 27. ARTS AND MANUFACTURES (*continued*)

VI. DRUGS (OTHER THAN NARCOTICS), MEDICINES, AND CHEMICALS.

Vendors of drugs are to be found in all Indian villages, while the larger villages and towns possess native doctors who have some empirical skill in the treatment of disease and some knowledge of indigenous drugs. About 1,500 substances are held to have medicinal virtues. Of late years the Government of India has appointed a standing committee to examine indigenous drugs, and a selection has been made of about fifty drugs most highly commended by local repute and most frequently met with in the drug shops. One of the most far-reaching measures of modern times for the benefit of

the health of the people of India has been Sir George King's system of having quinine, locally produced from cinchona, made up in small packets and sold (since 1896-7) for a quarter anna (one farthing) at every post office in India. This scheme has proved a commercial success, and has been of immense benefit to the inhabitants of fever-stricken tracts. Of the chemicals the most important articles are bicarbonate of soda, sulphuric acid, alum, and paper-making requisites. The increasing demand for chemicals may be taken as direct evidence of the progress of India's manufacturing enterprise.

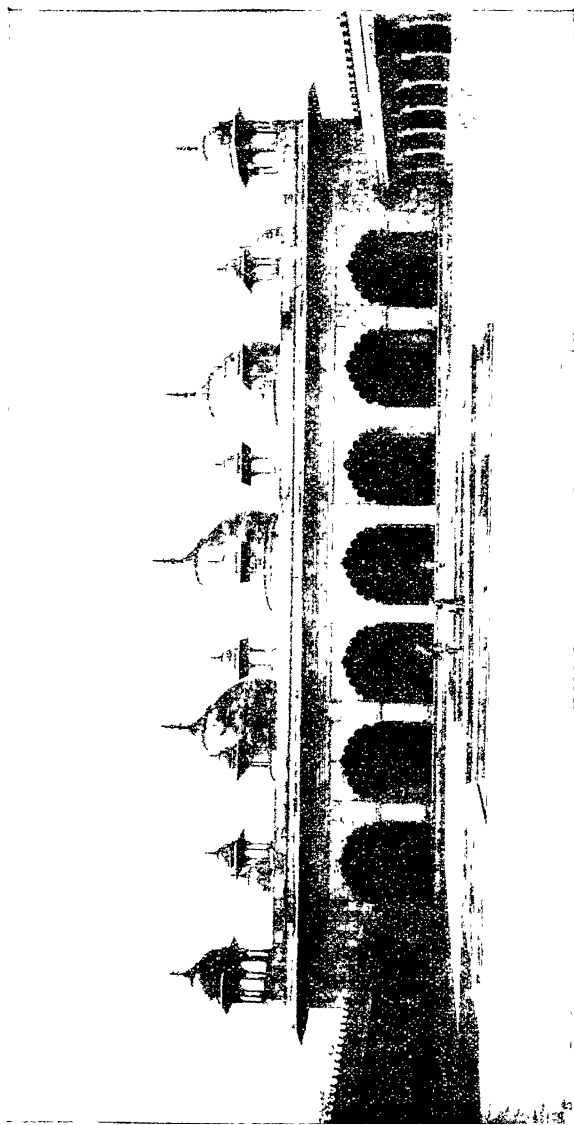
VII. EDIBLE SUBSTANCES (INCLUDING NARCOTICS) AND THE INDUSTRIES CONNECTED THEREWITH.

Staple foods. It would be as unsafe to assume that the people of India live exclusively on the produce of their own fields, as it would be misleading to suppose that they are entirely vegetarians, or live mainly on rice, as commonly believed in Europe. If any series of grains could be spoken of as the staple Indian food, it would be the millets and pulses collectively, certainly not rice, and still less wheat. The exports of food-grains could in no way appreciably affect the total food-supply of India, the more so since they are not drawn from the chief materials of Indian diet, nor from the most necessitous or most densely populated Provinces.

Industrial interests. The majority of the associated industries of the present series are agricultural or rural in character. Of these may be mentioned opium collection and manufacture; tea and coffee planting and manufacture; tobacco, pepper and cardamom curing; sugar manufacture; starch and arrowroot preparation; jam, preserved fruit, and sweetmeat making; and grain and flour-milling. The further stages in some of these occupations are, however, often urban; e.g. brewing and distilling, vinegar making, cigar manufacture, perfume making (especially from essential seeds and grasses), sugar refining, and bread and biscuit making.

VIII. TIMBER AND WOODWORK INDUSTRIES.

Indian timbers. Perhaps no feature of the arts and crafts of India manifests so great a diversity and so many points of interest as woodwork. In India the carpenter's craft very



THE MOTI MASJID, AGRA.

possibly gave birth to that of the stonemason within historical times. The art conceptions pursued have been influenced and diversified in each important section of the Empire by the texture of the most abundant and most suitable timbers, and by the religious sentiments and racial peculiarities of the people. The chief woods employed for ornamental work are teak, *shisham* (black-wood), *deodār* (cedar), sandal-wood, ebony, walnut, satin-wood, *padauk*, *tūn*, *nīm*, Madras red-wood, *anjān*, *dūdhi* (white-wood), red cedar, *sāl*, *rohira*, *babūl*, and jack-wood, the order enumerated being approximately that of their importance. Examples of the extent to which art conceptions have been influenced by the grain of the timber employed are afforded by the deep under-cutting that is possible with teak, red-wood and walnut; the low relief of *shisham* and *deodār*; the incised designs of ebony; the intricate and minute details of sandal-wood; and the barbaric boldness of *rohira*, *sāl*, *babūl*, and other coarse-grained and hard woods.

Indian arts and crafts connected with wood. The following classification embraces the more noteworthy crafts connected with wood: carving, as applied to architecture, furniture, or cabinet-work; inlaying with other woods or with metals; sandal-wood, carved, engraved, inlaid, or veneered; veneering, *appliqué*, marquetry, and lattice-work (*pinjra*) in woods, metals, porcupine quills, tortoise-shell, &c.; painting, staining, and varnishing; imitation inlaying (with metallic amalgam, &c.); papier mâché and imitation papier mâché, ornaments, toys, models, &c.; and minor woodwork, such as engraved fruits, sola-pith articles, &c.

Wood-carving, &c. In the wide range of wood-carving met with in Northern India the most powerful influence has undoubtedly been Muhammadan. Sikh art is but a recent adaptation from the Muhammadan, constructed more or less on Hindu lines, while the pure Hindu wood-carving of the present day may be described as a reintroduction. The essential features of the Muhammadan and Sikh carving may be said to be their direct adaptation to *deodār*; they are in consequence flat or in low relief. Woodwork constitutes by no means an unimportant aspect of the architecture of the United Provinces. It is carved, painted, or inlaid; and the timbers mostly employed are *shisham*, *sāl*, and ebony, with

nīm and white-wood for furniture and other ornamental purposes. Nāgpur and several other towns in the Central Provinces enjoy a considerable reputation for wood-carving; the work bears a strong resemblance to the Marāthā (or Deccan) style. In the rainless tracts in Rājputāna, Central India, Sind, and Baluchistān the ornamental carving met with is, for the most part, in stone, and such wood-carving as occurs is of a very elementary character. The wood-carving of Bengal is also insignificant. That of Gujarāt falls under two main types, the Jain style and its Muḥammadan adaptation and development. The wood-carving of Madras reproduces the characteristic features of Dravidian temples.

Except for the construction of pagodas, masonry buildings were formerly non-existent in Burma. This circumstance, and the abundant supply of teak, led to a great development of ornamental woodwork. Some of the Burmese figures, whether human or mythological, are excellent specimens of wooden statuary. In woodwork, as in other art conceptions, Nepāl is more nearly related to Tibet and China than to India. The most striking example of painted wood met with in India is the very peculiar art that has long existed in Sāvantvādi (Bombay Presidency). What is known as the papier-mâché work of Kashmīr is at present practically a class of wooden goods with designs painted on a light-coloured ground and coated with a special varnish.

IX. METALS AND MINERALS, AND THEIR ASSOCIATED INDUSTRIES.

Room for expansion. In view of its vast area India is poor in metallic resources; few of the metals and minerals that are met with have been fully exploited; and fewer still are worked on modern systems or with scientific appliances. Ample room, therefore, exists for expansion in the mining and metallic industries of the country. Nevertheless, the purely indigenous or village metal manufactures are perhaps, after those connected with wood, the most important of all the art industries of India. Most of the household utensils are made of metal, which thus to a large extent takes the place of the porcelain and glass of Europe. The shapes of the domestic vessels in common use have probably been derived from the fruits, shells, horns, and leaves utilized by primitive

man, and even to the present day ascetics use the shells of gourds and other fruits in place of metallic vessels. According to popular opinion copper is regarded as the purest of metals; brass is most frequently employed by Hindus and copper by Muhammadans.

Trade in minerals. The export of manganese ore has recently begun, and for many years there has existed a small traffic in tin from Burma. The growth in the production of coal is one of the most satisfactory indications of the expansion of manufacturing enterprise in the country. The production of petroleum and paraffin has recently assumed a position of vast importance to Burma, and has checked the importation of these minerals from America and Russia. India practically enjoys a monopoly in the supply of certain qualities of mica; but the trade in saltpetre, which was once a highly profitable Indian monopoly, has, through the prosperity of German manufacture, dwindled to a position of secondary importance.

Mineral industries. The first coal-mines under European direction were opened in Bengal in 1820, but no progress was made till the construction of the East Indian Railway in 1854. Even then advance was slow, until the jute mills of Calcutta had been started. The Provinces which come next to Bengal in order of production are Hyderābād, Assam, Central India, and the Central Provinces. The Indian gold-mines are chiefly in Mysore. Gold is washed from the sands of many Indian rivers, but the total amount thus procured is insignificant. The oil-wells of Burma are believed to have been worked for more than 2,000 years. Much of the oil is of a very high quality and can be burned in lamps in its crude state. Iron ores are very widely and abundantly distributed throughout India. Smelting after European methods is, however, carried on only in Bengal, where coal is found in proximity to the ore.

Salt is procured in India from several sources, each supplying large tracts of country. The chief sources are the rock salt of the Mayo Mines in the Punjab, and of Kohāt in the Frontier Province; the lake salt of Sāmbhar, Didwāna, and Pachbhadrā in Rājputāna, and Sultānpur in the Punjab; sea salt in Sind, Bombay proper, and Madras: and, lastly, foreign salt imported chiefly by Bengal and Burma. It would appear probable that the introduction into India of the art of making saltpetre

dates from the discovery of gunpowder. The Indian supply is derived mainly from Bihār. Borax or tincal, a native borate of sodium, is found with common salt on the shores of certain lakes in the Punjab, on the Tibetan frontier, and in Tibet itself. The supplies of brass and copper are wholly or almost wholly derived from foreign countries. Copper, being the chief metal used for domestic utensils and easily saleable when necessity arises, is in large demand in times of plenty and is instantly thrown on the market in bad years, so that the rise and fall of this traffic constitutes one of the safest indications by which to judge the economic condition of the people of India.

Pottery. The absence from India of a good and abundant kaolin has doubtless greatly retarded the higher developments of the potter's craft, but perhaps less severely than the social and religious customs of the people. According to Hindu observance, pottery is easily defiled and must be broken whenever polluted. The artistic skill of the Hindu potter has, in consequence, been developed in the manufacture of jars in which to store grain, spices, and pickles, rather than in the production of eating or drinking vessels. With the Muhammadans it may be safely inferred that the glazing of pottery originated with the production of tiles used in the ornamentation of tombs and mosques. In Southern India terra-cotta assumes a greater importance than in the north; and pottery of high quality, and in a style quite unlike that of Northern India, is produced at numerous centres. Potters, whether Hindu or Muhammadan, may be placed under two classes—the *kumhār* or village potter who as a rule produces non-glazed pottery, and the artistic potter or *kūzagar* who turns out coloured glazed ware. With the solitary exception of the pottery of Vellore, all the present-day glazed pottery of India is essentially of Muhammadan origin.

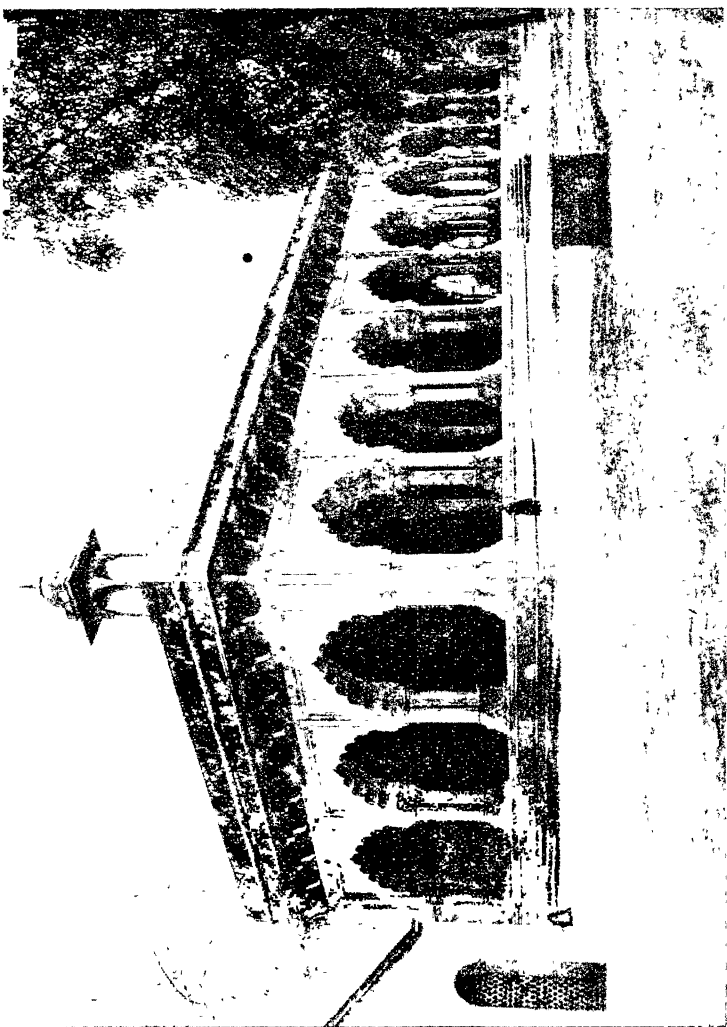
Terra-cotta ware. Unglazed pottery, or terra-cotta ware, is met with all over India. In some cases it is made so thin that it has been called *kūghazi* (paper pottery); of this nature is the terra-cotta of Gyrānwāla, Bahāwalpur, and Alwar. The coating of pottery with coloured lac and other substances is practised in Rājputāna and Southern India. At Lucknow a high standard has recently been attained in the production of artistic terra-cotta statuettes.

LESSON 28. COMMERCE AND TRADE

Government relations with trade. Even when the East India Company was entirely divested of its functions as a trading firm, the jealousy of outsiders, which had led to litigation against 'interlopers' in the seventeenth century, long continued. Up to 1837 Europeans were not allowed to acquire or lease land without the sanction of the Governor-General in Council. For many years commerce was encouraged, if at all, only by such indirect means as experiments in the establishment of new staples of cultivation. Even the alignment of roads, and subsequently of railways, though primarily intended to develop the country, had frequently to be determined by other considerations, especially military needs.

Agricultural Department. As a result of the inquiry into the famine of 1866, a new Department of the Government of India was formed to deal with matters relating to Agriculture and Commerce. Financial pressure led to its abolition in 1879, when the consideration of commercial questions was transferred to the Finance Department. Shortly afterwards, in consequence of the recommendations of the Commission which inquired into the famine of 1876-8, a new Department was constituted to deal with Land Revenue and Agriculture only. Between 1875 and 1905 considerable advance was made in the methods of collecting and publishing statistics relating to production and trade. The complaint was, however, commonly made by those engaged in commerce in India, that Government was indifferent to trade interests, and that commercial questions referred to it were unduly delayed. The manner in which such questions had to be treated inevitably led to their being considered primarily from the standpoint of administrative convenience, and thus far the complaint was perhaps justified.

Commerce and Industry Department. The first real attempt to bring Government more closely into touch with the interests of trade was a proposal to open a Commercial Bureau. The discussion which followed was valuable, but the increased pressure of work in the Secretariat of the Government of India suggested a more far-reaching measure. In



DIWĀN-I-KHĀS OF DELHI PALACE.

1905 a Department of Commerce and Industry was formed, and placed in charge of a Member of Council, which has taken over from the Finance Department branches of the public business relating to commercial subjects, and other similar branches hitherto dealt with by the Home, Revenue and Agriculture, and Public Works Departments. In place of the Commercial Bureau at first proposed, a Director-General of Commercial Intelligence has been appointed to the new Department, who will control the preparation of statistics, and will have yet more important functions, as an intermediary between the new Member of Council and the mercantile public. By these fundamental reforms questions relating to commercial interests have been concentrated in a single Department of the Government of India, their consideration and speedy settlement have been greatly facilitated, and Government is no longer exposed to the charge of indifference to the interests of an important section of the community.

Paucity of harbours. The geographical position of India is apparently favourable for international trade. Projecting as a great peninsula into the Indian Ocean, a long coast-line is presented to the navigator facing west and another equally long facing east, Burma again presenting a third long coast-line opposite the eastern coast of India. But vast as is the littoral of the Indian peninsula, it is singularly lacking in harbours offering accommodation for the large vessels now employed in the international carrying trade. On the west coast, from Baluchistān to Cape Comorin, navigation practically ceases during the monsoon months, when the rocky shores are furiously beaten by wind and waves. At only a few ports on that coast is an intermittent foreign trade carried on, mainly with Ceylon; and the great bulk of the foreign trade is concentrated at Bombay and Karāchi, these being the principal channels for the trade of North-western and Western India. On the east coast of India the absence of harbours is even more striking, for south of the Gangetic delta there is nothing better than an open roadstead unapproachable within miles by any steamer drawing more than 15 or 20 feet. An endeavour has been made, by the construction of sea-walls, to convert the Madras roadstead into a port, but with only moderate success.

The Burmese coast of the Bay of Bengal is much better

supplied with ports, Moulmein, Rangoon, Bassein, Akyab, and Chittagong having good harbours accessible by steamers of large draught. But the foreign trade has here been largely concentrated at Rangoon, that port possessing inland communications by the Irrawaddy and now still farther by railway; while Moulmein, Bassein, and Akyab have been restricted to the trade of the surrounding districts, being cut off from the distant interior. Chittagong was similarly isolated until quite recently, when the railway linked it with Assam.

Chief ports. As the result of these physical conditions, practically the whole of the foreign trade of India is concentrated in the ports of Calcutta, Bombay, Rangoon, Madras, and Karāchi, naming them in the order of their importance. The first four are the seats of Provincial Governments; in them the banks and some of the railways have their headquarters, and most of the European mercantile community is gathered; while Calcutta, Bombay, and Rangoon are also centres of industrial activity.

Possibility of developing Indian manufactures. It is frequently said that India can manufacture almost anything that is required for local consumption, that therefore it is reasonable to anticipate a speedy development of national industry on a large scale; and that British capitalists should help in realizing the anticipation. It is quite true that India can manufacture many of the things required for consumption in the country. The question then arises whether the articles to be manufactured can be turned out with such cheapness as to permit of successful competition with similar imported goods produced by capitalist manufacturers in Europe, under conditions combining the highest degree of skill, efficiency, and economy, and whether a local market can be secured large enough to encourage the investment of capital in a new enterprise.

Effects of a small market. These two considerations run together, the first being dependent to a large degree upon the second. The imports include many articles which cannot be produced under conditions allowing of successful competition with imported articles; but there are also others which certainly might be so produced. Then follows the question whether there is a sufficiently large demand for the latter

to permit of their manufacture on such a scale as to secure the greatest economy and efficiency. To this question there is in most cases but one answer: there is no such large demand. A manufacturer in Europe who sends his goods to India sends them also to many other countries, and he has besides the local demand of a country in the most advanced stage of industrial civilization. In many cases his trade with India is not even a large proportion of his total business; and if he lost it, he would not lose any portion of his capital. The manufacturer setting up an establishment in India finds himself in a different position. He is confined to the Indian market and the still more limited demand of the neighbouring countries, for he cannot export his goods to other manufacturing countries in face of the competition of goods made on the spot. A serious risk is involved in opening a new industry under such conditions, for the loss of the local market from any cause, or the reduction of the demand through the competition of importers determined not to lose their position, would involve not merely loss of profit but the loss of capital. Such considerations have no doubt prevented capitalists from embarking on uncertain enterprises in India. There are, however, some industries which India can certainly pursue with success, the materials being cheap and abundant and the demand extensive. It is the aim of Government to collect and publish information bearing on such subjects.

General distribution of foreign trade. The foreign trade of India is conducted with every continent and most of the countries in the world, but in very unequal proportions. The bulk of the trade is carried on with European countries, which supply four-fifths of the imports and receive half of the exports. Asiatic countries have the largest share of the remainder. The imports from Australia (largely consisting of horses and copper) do not seem likely to attain to large dimensions. Imports from Africa and America are also comparatively trifling, and would cease to have any importance if it were not for Mauritius sugar and American petroleum. The bulk of the foreign trade of India, since the British established themselves firmly in the country, has always been with the United Kingdom. But the decline of the British share of Indian trade became inevitable as soon as the Suez Canal was opened and continental traders were able to

undertake the direct conveyance of merchandise to and from India.

External land trade. In addition to the foreign trade carried oversea, there is commerce with neighbouring countries across the vast Indian frontier from Baluchistān to Siam. This commerce is of small dimensions, the total value in 1904-5 amounting to no more than 15.34 crores. The more valuable portion consists of the export from India of foreign goods such as are commonly used in India—cotton yarn and piece-goods, hardware, sugar, salt, with similar articles of Indian origin; also petroleum (to Western China), tea, and a number of other articles, in varying quantity, but mostly of trifling value. This trade has in places to contend with obstructions placed in its way by the rulers of the adjoining countries.

Trading castes. Broadly speaking, the greater part of the internal trade remains in the hands of the natives, but the European firms which export agricultural produce are extending their agencies. Almost every village has at least one resident trader, who combines the functions of money-lender, grain merchant, and cloth-seller. Before the commencement of British rule the great Banjārā tribe, with numerous branches bearing different names, supplied most of the carriers; but the extension of railways has largely replaced pack animals. Almost every Province has its peculiar trade castes. The Mārwarīs of Rājputāna are, however, found almost everywhere, and in Assam they are of more importance than the natives of the Province. In Bombay the Pārsīs, by the boldness and extent of their operations, tread close upon the heels of the great English houses, while Lohānas, Vānis, Bohras, Memons, Khojas, and Lingāyats occupy different areas in the Presidency. Lingāyats are found also in Northern Madras and Mysore, but further south Chettis and Komatis predominate. The traders of the Punjab are largely Khattīs and members of the numerous castes included in the generic term of Baniā. In Bihār and the United Provinces Baniās take the lead, while in Bengal Brāhmans and a number of lower castes share different classes of trade.

LESSON 29. IRRIGATION AND NAVIGATION

Irrigation works a natural result of the climate. Irrigation works, the object of which is the artificial application of water to the land for purposes of agriculture as a means of supplementing the natural rainfall, although almost unknown in Northern Europe, have existed in India, as in most other Eastern countries, from time immemorial. This is a natural result of the conditions of climate. India contains large tracts, such as the deserts of Sind and the South-western Punjab, which are practically rainless, and in which cultivation without irrigation is impossible. There are others, such as the Deccan plateau, where cultivation is exceedingly precarious, owing to the great irregularity of the rainfall and the long intervals during which crops may be exposed to the fierce heat of the sun, and to dry and scorching winds. In other more favoured tracts, such as the Himālayan submontane districts, a serious failure of the rainfall is seldom or never known, yet here also irrigation works, which are usually of a simple kind such as can be constructed by the people themselves, are of the greatest value in improving the out-turn of the crops. Lastly, there are districts which ordinarily receive so copious a rainfall that rice is almost the only crop grown; but for this water is required at certain critical periods when there may be a break in the rains, and a full harvest can only be secured by irrigation.

In general it may be said that the security of the harvest depends on the existence of some form of irrigation in almost all parts of India, except in tracts such as Eastern Bengal, Assam, or Lower Burma, where the average rainfall does not fall short of 70 inches per annum. As might be expected under these conditions, the simpler forms of irrigation works have been limited in number and capacity only by the resources and engineering skill of the people, by the insecurity of tenure, and by the interruptions caused by invasion or internal dissension. Some of these works were constructed by the former rulers of the country; but it was not until after the establishment of British rule that the larger and more important works, many of which irrigate annually several hundred thousands of acres, were undertaken. No similar works in other countries



ASOKA PILLAR AT BAKHIRĀ, MUZAFFARPUR DISTRICT.

approach in magnitude the irrigation works of India, and no public works of nobler utility have ever been undertaken in the world.' (Sir J. Strachey's *India*.)

Different types of irrigation works. Irrigation works may be conveniently divided into three great types; namely, lift, storage, and river works, which are represented by wells, tanks or reservoirs, and canals. In lift-irrigation the water is raised from a lower level to that which will command the area to be irrigated, the raising being effected either by manual labour or by animal or mechanical power. Storage works are reservoirs, formed by the construction of dams across drainage lines. River works consist essentially of canals, drawing their supplies from rivers which are in continuous flow during the whole or the greater portion of the year. In most cases they include a weir, which is constructed across the bed of the river immediately below the off-take of the canal, for the purpose of holding up water to the full supply level of the canal during low stages of the river.

Permanent and temporary wells. When the spring level is near the natural surface and the soil is fairly stiff, a well may consist of nothing more than a hole in the ground over which the appropriate lifting appliances are erected. These wells, which usually fall in or are abandoned after one or two years' working, are called 'temporary' wells, to distinguish them from 'permanent' or masonry-lined wells, which, if solidly built, may last for an indefinite period. In some parts there is an intermediate type, in which the well is lined with a wooden cylinder or with brushwood or wicker-work.

Extension of well irrigation. Wells play such an important part in the agricultural system of India, and are of such great protective value, that the extension of this form of irrigation must be regarded as highly desirable. There are, however, obvious limits to such extension, even in tracts where conditions of soil, climate, and spring level are favourable. The first cost of a well is only one of the factors to be considered, for its subsequent working requires a considerable amount of capital and very careful husbandry. The extension of well-cultivation must, therefore, always be gradual, and although it may be effectively encouraged it cannot be forced. The encouragement hitherto afforded by the state has been of two kinds—a system of agricultural advances known as *takūvi*,

and a permanent or temporary exemption of the lands depending on the well from any enhancement of land revenue as a consequence of the improvements.

Storage works. Tanks or storage works are of all sizes, ranging from the great lakes formed by the construction of high dams across the beds of large but irregularly flowing rivers, such as Lakes Fife and Whiting in the Bombay Deccan, and the Periyār lake in Travancore, in which are impounded from 4,000,000,000 to 6,500,000,000 cubic feet of water, to the small village tanks to be found throughout Southern India, many of which irrigate less than ten acres. The two largest works executed by Government, the Nira Canal and Periyār Project, have each cost about Rs. 1,300 per 1,000,000 cubic feet in a full lake. Although these and many other large storage works have been constructed by the British Government, tank-irrigation is essentially a product of native rule, and almost the whole of the tank-irrigated area is from old native works, the maintenance of which is now undertaken in whole or in part by the state. The average area recorded as irrigated from tanks in British India is about 8,000,000 acres, but the supply to many of the works is very precarious, and is apt to fail in years of extreme drought.

Small private canals. Wells are constructed and maintained solely by private enterprise, and this is also true of the smaller forms of tank. The third and most important class of irrigation works, viz. river works or canals, are generally of such magnitude, and affect so many interests, that they could only have been constructed, and can only be efficiently maintained, by the state. There are, however, a certain number of petty works of this class which have been constructed and are still maintained by private enterprise, with occasional assistance in some Districts from Local funds. The total area protected by private canals is probably between 7,000,000 or 8,000,000 acres.

Perennial and inundation canals. The great canals, which have been constructed and are maintained by the state, may be divided into two classes, perennial and inundation canals. The term 'perennial' is generally applied to a canal which can draw off a constant supply without the assistance of a weir, or which is provided with a weir which will render the supply to the canal dependent only on the quantity of water

in the river and not on its surface level; while, if the supply is not sufficiently continuous for the purposes required, it can generally be rendered so by the construction of storage works. Inundation canals are simple channels taking off from the banks of a river which is generally higher than the ordinary low-water level of the stream. Water flows into these cuts during the flood season, and they remain in flow until the river falls below the level of their beds. The most important inundation canals are to be found in the Punjab and Sind, i. e. in the valley of the Indus and its tributaries.

Canals made by former rulers. Although the present system of large irrigation works has been almost entirely constructed by the British Government, examples are not wanting of old river works undertaken by former rulers of the country. Irrigation was carried out on a large scale in the Cauvery delta, the supply being maintained by means of a weir, known as the Grand Anicut, which is said to have been constructed over 1,500 years ago. Most of the weirs on the Tungabhadra were constructed by the Hindu monarch, Krishna Rāya, at the beginning of the sixteenth century. In Northern India the Muhammadans appear to have made frequent attempts to utilize the water of the river Jumna. In the middle of the fourteenth century Fīroz Shāh, Tughlak, constructed a canal on the right bank of the river, 150 miles in length, for the irrigation of his domains in Hissār. This canal, which had silted up, was reopened in Akbar's reign, and a branch was made to Delhi in the reign of Shāh Jahān; but during the decline of the Mughal dynasty both canals gradually silted up. A canal was also made on the eastern bank of the Jumna at the beginning of the eighteenth century, but appears to have likewise been abandoned, although it is said to have carried water to below Sahāranpur. These canals were subsequently cleared and reopened by the British Government, have since been re-aligned, extended, and improved, and are now first-class irrigation works known as the Western and Eastern Jumna Canals. In the Punjab the small Hasli Canal had been made by former rulers, for the purpose of carrying water from the river Rāvi to Lahore and Amritsar, on very much the same alignment as the present Bāri Doāb Canal. The simple system of irrigation by inundation canals appears to have been practised from time immemorial in Sind and the

Punjab; and many of the existing canals of this class in Multān, Muzaffargarh, and Dera Ghāzi Khān were brought to a fair state of efficiency under the more energetic Pathān and Sikh governors of these Districts, and were in operation at the time of annexation, but have since been considerably developed.

Irrigation revenue. The revenue receipts from Government irrigation works are derived almost entirely from the charges made for water or for water advantages; and these charges depend throughout India not on the volume of water supplied, the amount of which may vary largely according to the character of the season and other considerations, but on the kind of crops cultivated and the areas actually or ordinarily irrigated. In former days, when land revenue was taken in kind, the state's share of the produce increased with the introduction of irrigation; and it was in anticipation of such an increase that rulers or farmers of land revenue constructed, or contributed towards the cost of constructing, irrigation works.

Consolidated and separate rates. When, under British rule, the system of cash payments succeeded, and assessments were made with reference to average produce, lands which were assured of irrigation were naturally assessed at higher rates than similar lands which did not enjoy this advantage. This system is still followed throughout the Madras Presidency in Sind, on a number of old irrigation works in Bombay, and in the Burma Districts which have undergone settlement. In the Punjab and the United Provinces, and also in Bengal (where the land is under permanent settlement), the charge for water is distinct from and independent of the land-revenue assessment, and is levied in the form of a water-rate on the occupier. Occupiers' rates are also levied on all the Major, and on several Minor, works in the Bombay Deccan. The charges for irrigation, whether taken in the form of enhanced land revenue or of occupiers' and owners' rates, vary very much, depending on the kind of crop, the quantity of water ordinarily required for it and the time when it is required, the quality of the soil, the intensity or the constancy of the demand, and the value of irrigation in increasing the out-turn. The charges for irrigation may be taken as varying from 10 to 12 per cent. of the value of the crop, except in

Bengal and the Bombay Deccan, where the average is little more than 6 per cent.

Connexion of irrigation with navigation. Inland navigation and irrigation are closely connected, for each depends for its fullest development in India on the construction of canals. At first sight it may appear that the same channels might be made to serve both purposes. Apart, however, from all questions of cost, it has been found that the exigencies of irrigation and navigation are not always compatible, and that traffic is not attracted to a navigable canal which does not pass through large cities or important trade centres, or which is not in uninterrupted connexion either with the seaboard or with the waterways which form the most convenient outlet for the produce of the tract which the canal traverses. Hence it happens that irrigation canals are not always suitable for navigation, and, on the other hand, that many canals have been constructed for purposes of navigation only and do not irrigate a single acre.

General results attained on navigation works. Not one of the navigable canals in British India, whether intended primarily for irrigation or constructed solely as a navigation work, is directly remunerative, and in many cases the navigation receipts do not cover the working expenses. The extension of navigation works must therefore depend for its justification on the benefits which the country will derive from a reduction in the cost of transport. This reduction will be real and material only in those tracts where the public can be trusted to avail themselves freely of the advantages offered by water communications. There is no Province in which facilities are so likely to be appreciated as in Eastern Bengal, with its dense population, its thriving industries, and its innumerable river channels. There is great scope for further extensions of inland navigation in this tract. Navigation advantages have also been fairly appreciated in the deltas of Orissa and Madras, and have certainly proved of great value to the cultivators. Elsewhere, as on the Kurnool-Cuddapah and Son Canals, or the great perennial canals in Northern India, navigation may be regarded as a failure. In general it may be said that, outside the deltaic tracts in Bengal, Orissa, Madras, and Sind, navigable canals will never be of much use or value as a means of inland communication.



MARQUESS OF DALHOUSIE

Navigable rivers. It remains to consider briefly the value of the rivers of the country as a means of inland communication. Some of the large rivers of India, such as the Nerbādā and the Tāpti are, unfortunately, by reason of their rocky beds and swift floods, practically useless for navigation except at their mouths. The Indus, the Ganges, and the Brahmaputra are navigable by steamers all the year round, or for the greater part of the year, for hundreds of miles above their mouths, or above the heads of the navigable canals traversing their deltas. The great rivers on the east coast of the Peninsula—the Mahānadī, the Godāvāri, and the Kistna—are all navigable for some distance above the heads of their deltas, but the traffic on them is not very considerable. All round the coast there are innumerable small rivers, creeks, and backwaters affording facilities for water transport which are fully utilized by small native craft; but outside the zone of such operations inland navigation is practically confined to the deltas and to the valleys of the great rivers which form the natural waterways of the country. As to Burma, there is no Province in which the natural waterways afford greater facilities for inland navigation, or in which it is more extensively practised.

LESSON 30. RAILWAYS AND ROADS

Early lines projected. Railways had been working in England for several years before any steps were taken to construct them in India, and it was not until 1845 that the first reference was made on the subject by the Court of Directors. As a result of this reference, contracts for the construction of experimental lines were entered into with the East Indian Railway Company, for a line from Calcutta (Howrah) to Rāniganj (120 miles); with the Great Indian Peninsula Railway Company, for a line from Bombay to Kalyān (33 miles); and with the Madras Railway Company, for a line from Madras to Arkonam (39 miles). In an exhaustive minute written in 1853, Lord Dalhousie urged the importance of a speedy and wide introduction of railway communications

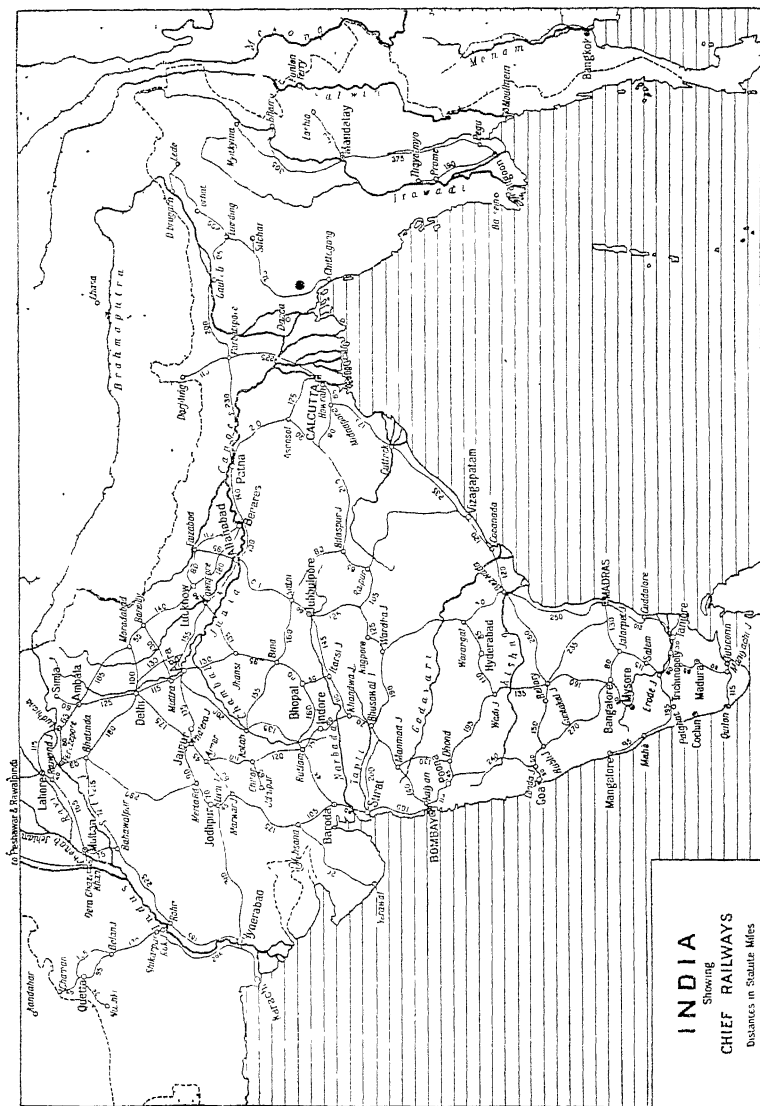
throughout India; and he specially recommended that, in the first instance, a system of trunk lines should be formed, connecting the interior of each Presidency with its principal port and the several Presidencies with each other. The Court of Directors accepted the general plan proposed; and by the end of 1859 eight companies had been formed for the construction of nearly 5,000 miles of line, with a capital under guarantee of £52,500,000 sterling. Thus was laid the foundation of the system of railways now existing in India.

Character of railway construction. In carrying out the earlier railways, more attention appears to have been paid to directness of alignment than to ensuring that the railway should adequately serve the trade centres on the route, and numerous large towns were left on one side, when by a slight diversion the railway might have been brought to the doors of the people. This policy has had a most injurious effect on the revenues of the railways. The lines themselves were constructed after the best methods then known in England, with the result that they not only cost a great deal more than the circumstances justified, but have involved much expenditure afterwards when traffic developed and alterations at stations became necessary. The buildings were all of the most substantial kind, and the permanent way consisted of heavy iron rails of the double-headed type, weighing from 68 to 84 lb. to the lineal yard, laid in cast-iron chairs secured to wooden sleepers. Steel rails have since superseded iron, but the weight on the broad-gauge (5 feet 6 inches) lines remains very much the same. On the metre-gauge (3 feet 3 $\frac{3}{8}$ inches) lines the rails do not weigh more than 50 lb. to the lineal yard. On many of the broad-gauge lines metal sleepers have replaced wood, though the latter material is still in general use on the metre and narrow-gauge (2 feet 6 inches or 2 feet) lines. The wood used for sleepers is generally *deodār* or *pyingado*, but Australian hard-woods are coming into use. On bridges and at points and crossings the sleepers are almost entirely of *sāl* wood.

Economic effect of railways: passenger traffic. When the idea of constructing railways in India was first started, it was considered that there would be little passenger traffic on account of the poverty of the people, and that chief business would be derived from goods. It was not realized

how important a part pilgrimages to the numerous sacred shrines and rivers all over India play in the daily life of the population. Before railways were open pilgrimages occupied months and absorbed the savings of a lifetime. A trip to Puri or Hardwar, or any other of the popular Hindu shrines, is no longer a formidable undertaking. The cost is comparatively trifling, and the journey involves an absence from home of only a few days. No religious festival is now held without bringing, often from very long distances, thousands of devotees to the several shrines. Even Mecca has been brought within easier reach of the faithful; and large numbers of Muhammadans, not only from India but also from Central Asia, now undertake the pilgrimage, which before was possible only for the wealthy. Another factor overlooked was that cheap, easy, and quick communication would enable the surplus population in congested areas to move to the more sparsely populated parts of the country, where labour alone was needed to make the soil yield bountiful harvests. Thousands now travel annually to the jute-fields and tea-gardens of Eastern Bengal and Assam, the rice-swamps of Burma, and other parts of the country; and distance no longer hinders the movement of the people. The greater the extension of the railway system, the more marked has this movement been; and the passenger traffic contributes to the business of railways to a very much larger extent than was anticipated. The development has been in all classes; but the principal increase has been in third-class passengers.

Goods traffic. In a country which is almost entirely agricultural, and with distances so great as in India, the principal traffic of railways must necessarily be in goods. Before railways were made, the cultivator derived little benefit from an abundant harvest. His markets were confined to a small area; and if the supply was greater than the demand, as it would be in a good season, prices fell, and he was deprived of the profits from the larger yield and often found it more economical to leave part of his crop uncut. Railways have altered these conditions. The improvement in communications has equalized prices in the case of agricultural produce within reasonable distance from a railway. When harvests are abundant, food-stuffs no longer rot for want of buyers, since the farmer has access to all the markets



of the world. The development in goods traffic has consequently been even more marked than in the case of passenger traffic. The traffic consists chiefly of grain and seeds, coal, cotton, jute, salt, sugar, and timber. The greatest development in recent years has been in the coal traffic. The principal collieries are situated in Bengal, and they are practically the only local source of supply for all Northern, Western, and Central India. For some time movement was prevented by high rates, and these regions found it cheaper to import from England; but the reductions made in recent years have caused the almost complete displacement of English coal by Indian. The development of local products, with a corresponding increase in the wealth of the people, has led to a greater demand for manufactured goods from foreign countries, and a marked increase in the import trade accompanies the extension of the railway system.

Effect of railways in famine. While the benefits conferred by railways are at all times very great, their value is most realized during periods of famine. During the twelve months ending September 30, 1900, food-grains to the extent of nearly 2,500,000 tons were imported by the affected areas, which in ordinary years export about 250,000 tons. The importance of good communications as a means of mitigating the suffering caused by famine is well illustrated by the history of the Orissa famine of 1865-6, when ships laden with grain were prevented by the winds of the south-west monsoon from leaving Calcutta, and it was impossible to supply food to the starving people.

Moral effect of railways. It is less easy to gauge the moral influence which railways have exercised on the habits and customs of the people. It is often said that they are helping to break down caste; but it is doubted by many, whose opinions are entitled to respect, whether there has been any weakening of caste prejudices among the orthodox. There can, however, be little doubt that increased travel, and the mixing of all castes in carriages which railway travel necessitates, must produce greater tolerance, if it does no more.

Roads: early conditions in India. Before the advent of British rule, roadways in the modern sense were practically unknown; and even after its establishment there were few

to be found, except within urban limits, until 1839, when it was decided to make a strenuous effort to connect Calcutta with Delhi by means of a good metalled road suitable for wheeled vehicles, with bridges over small streams and ferries over the larger rivers. The level plains of India, scoured by streams which, for eight months or more in each year, are passable without difficulty by the conveyances generally used in the country, offer so small an obstacle to intercourse between different localities that, up to the end of the eighteenth century, there was no demand for prepared tracks even for military purposes, transport being chiefly effected by pack animals travelling along the village pathways, while travellers could ride or be conveyed in palanquins. 'From a military point of view,' as observed by Sir G. Chesney in his *Indian Polity*, 'this state of things had even its advantages. The want of roads taught Indian armies how to do without them. The whole system of military transport and supply being necessarily adapted to a roadless country, the ordinary requirements under this head during peace differed in no material degree from the requirements of a time of war.'

Mughal roads. On the other hand, the necessity of maintaining a right of way and providing security to life and property on frequented routes was never lost sight of; and the Mughal emperors, in particular, concerned themselves to mark out and guard the routes most used by the caravans which carried traders and goods from one end of India to another. Among these were the important tracks from Mirzāpur to the south (known as the Great Deccan Road), from Agra to Ajmer, and from Allahābād to Jubbulpore, which were kept open by the British until after the Mutiny. There were also two or three established trade routes from Delhi.

Later development of roads. In the early period of British rule matters did not advance very fast; the improvement of roads was undertaken chiefly with a view to facilitate postal communication; and until the various sections which afterwards formed the Grand Trunk Road from Calcutta to Delhi were commenced, the idea of providing for wheel traction was hardly entertained. The main roads were at that time under Military Boards, one for each Presidency, without sufficient

powers either financial or administrative. In 1854-5 the Military Boards were abolished, and Public Works Departments were organized in all the Provinces. After this reform progress in road-making became much more methodical, and the up-keep more satisfactory, than had previously been the case. About the same time the construction of railways began to have a considerable influence on the function and character of new roads. With the extension of the railway system, it has become more and more necessary to build roads in a direction which will enable them to feed rather than compete with the newer means of communication; and greater demand for metalled roads has also been aroused. Another great factor in stimulating the construction and up-keep of roads has been the extension of local self-government. Most Provinces of British India are now provided with District and Sub-District boards, whose primary duty it is to apply the funds at their disposal from the land-cess and other sources of local income to the maintenance and improvement of local communications. Roads and railways together have revolutionized the methods of transport, causing pack animals to be almost entirely displaced by wheeled vehicles throughout the greater part of the country. In several instances well-built roads have been wholly or partly utilized for the purposes of light railways or tramways.

LESSON 31. POSTS AND TELEGRAPHS

Development of the postal service. Prior to the year 1837 India possessed no general postal system. A few lines of mail couriers, connecting the principal towns with the seats of Government, had been established for the conveyance of official letters and parcels; but their use by private individuals was conceded only as a privilege on payment. In 1837 a public post was established, and the Government reserved to itself the exclusive right to convey letters for payment in the territories of the East India Company. The charges for the conveyance of letters were levied in cash, payable in advance, and varied according to weight and distance. Thus, the charge for sending a letter from Calcutta to Bombay was one rupee, and, from Calcutta to Agra 12 annas, per tola. The

value-payable, or cash on delivery, system was introduced into India in 1877, and the insurance of postal articles in 1878. In 1898 India joined in the scheme for the adoption of a uniform rate of postage at the rate of a penny per half ounce on letters throughout the British Empire. In 1880 the money-order business was taken over by the Post Office. On this system have been grafted measures for the remittance of rent to landowners and of Government dues such as land revenue, cesses, and income-tax. These measures have a special value in protecting the people from illegal exactions. The operations of the Imperial Post Office extend to all the Native States of India which never had postal systems of their own, and to a large number of States, including Kashmir, Baroda, and Mysore, which have given up their separate systems.

Mail runners. Mail runners are supplied by the Post Office with belts and badges, and also with spears to which clusters of small bells are attached. The bells affixed to the spear-head are useful in scaring away wild animals, and by their jingle they help the runners to travel at a measured pace and they notify the approach of the mails. In many parts of the country mail runners are exposed to considerable danger from different causes, such as floods, storms, wild beasts, and highway robbers. Thus in 1898-9 two runners were swept away by avalanches and killed, one while carrying the mails over the Zoji La Pass on the road to Leh, and the other while crossing the Lowāri Pass on the Chitral line; and two runners in Bengal were killed by tigers. Although the mails frequently contain cash and other valuables, it seldom happens that a runner attempts to tamper with them; and there are many cases on record in which runners have defended the mails in their charge at the risk, or cost, of their own lives.

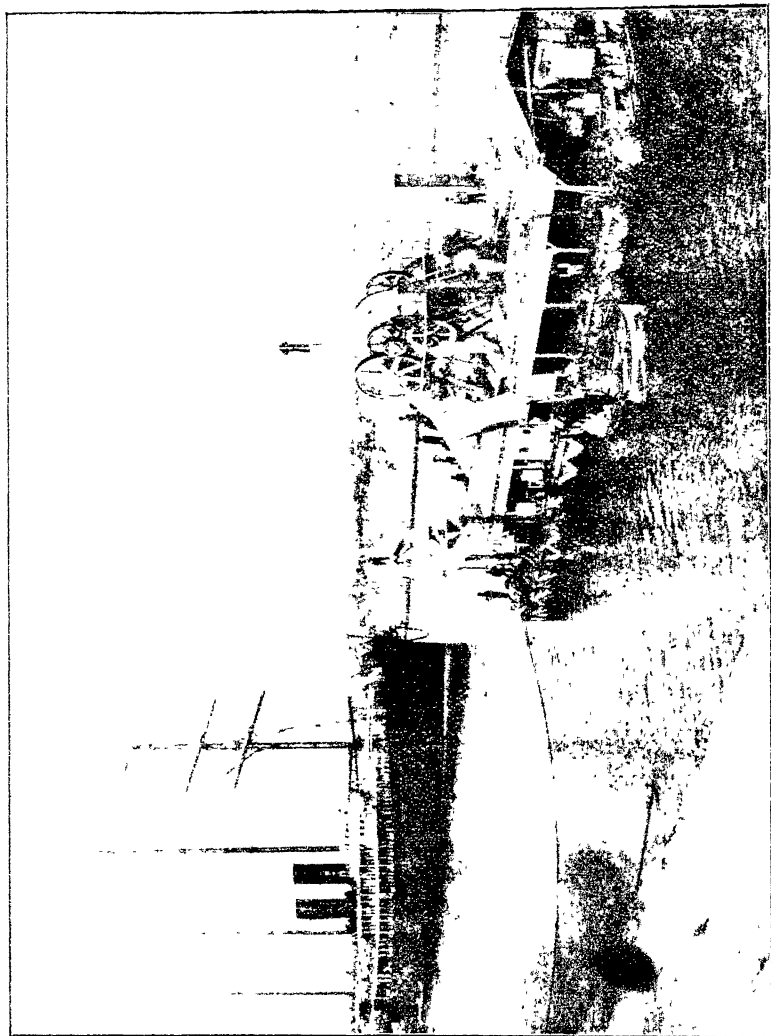
Foreign postal traffic. The earliest mail communication between Europe and India was by sailing vessels, starting at irregular intervals from England and proceeding round the Cape of Good Hope. In 1815 the charge for a 'single' letter was 3s. 6d., payable on delivery in India, of which 1s. 2d. was paid to the ship, with an additional 2d. to the commander. But soldiers and sailors in the service of the Company or the Crown were privileged to send and receive letters at the rate

of 1*l*. In 1825 the voyage was for the first time performed by steam. In 1835 the Indian mails were first conveyed over the Isthmus of Suez and through the Red Sea. In 1888 the passage through the Suez Canal was substituted for the conveyance of the mails across Egypt. The mails are now landed at Bombay ready sorted for the chief towns and principal lines of railway.

Post Office savings banks, &c. Post Office savings banks came into existence in 1882. In 1903-4 the amount at credit of depositors was nearly 7 annas per head of the population, against £3 9*s*. 1*d*. per head in the United Kingdom. The Indian Post Office has a life insurance branch for all Government servants subject to civil rules, and since 1892 has acted as an agency for the sale of quinine produced at the Government factory. Postal telegraph offices were first opened in 1883.

Experimental telegraph lines. In 1851 Dr. W. B. O'Shaughnessy, Assistant Surgeon and Professor of Chemistry in the Medical College at Calcutta, obtained sanction to construct experimental telegraph lines along the Hooghly from Calcutta to Diamond Harbour, with a branch from Bishtopur to Māyāpur, and an extension from Kukrāhāti (on the farther side of the Hooghly) to Kedgerree, making, with some short additional sections, a total of eighty-two miles. In the same year four offices (Calcutta, Māyāpur, Bishtopur, and Diamond Harbour) were opened for business, which was principally connected with shipping, and two others (Kukrāhāti and Kedgerree) were added in February, 1852. The receiving instrument was a small galvanoscope, designed by Dr. O'Shaughnessy and made in India, and this pattern continued in use until the Morse instrument replaced it early in 1857.

Extension of telegraphs. On these experimental lines proving successful, Lord Dalhousie obtained sanction from the Court of Directors for the construction of lines from Calcutta to Agra, Agra to Bombay, Agra to Peshāwar, and Bombay to Madras, extending in all over 3,050 miles and including forty-one offices. These were opened for paid message traffic in February, 1855. By 1857 the lines had been further extended, bringing Mysore, Ootacamund, and Calicut into the system, which then comprised 4,555 miles of wire, with sixty-two offices open to the public. During the



THE STEAM CANAL

Photocolor Co.

Mutiny the lines in the then North-Western Provinces, and in parts of Central India, suffered considerable damage, about 760 miles being entirely demolished. But the Telegraph Department was still able to render notable service in connexion with the suppression of the outbreak; and the fact that nearly 2,000 miles of line were constructed during the following year, in addition to the reconstruction of the lines destroyed, shows that the political value of the telegraph was by that time fully appreciated. Since then the department has steadily expanded year by year. At present its lines and operations extend from Mastūj in the north to Kolachel in the extreme south of India, and from Robāt Kila on the Perso-Baluchistān frontier to Kengtung in the extreme east of Burma.

LESSON 32. RENTS, PRICES, AND WAGES

The nature of Indian rents. In Bengal the Government demand, representing at the time of its assessment 90 per cent. of the economic rent, was fixed in perpetuity in 1793; but the extension of cultivation, and the rise in the value of produce, since that date have been so considerable that the Government revenue at the present day is estimated to absorb no more than 25 per cent. of the economic rental, leaving 75 per cent. to be enjoyed as a net rent by the landlords or other parties who now stand between the cultivator and the state. In the other Provinces the Government demand has not, as a rule, been fixed in perpetuity; but owing to the gradual influence of Western ideas regarding the character and political value of proprietorship in land, the state has by degrees reduced its share of the profits from 90 per cent. to a maximum of about 50 per cent., leaving the remainder as a substantial net rental in the hands of the persons whom it has recognized as landowners. The peculiarity of Indian rents lies therefore in this fact, that whereas in most countries the land revenue is an assignment from the rent made by landowners to the Government, in India the net rent is, historically speaking, a relinquishment of part of the profits of land by the Government to the landowners.

Rents paid in kind. The payment of rent in kind is still

exceedingly common in all parts of India. Generally speaking, it is prevalent in tracts where the country is yet undeveloped, or where the crops are liable to extreme variations of out-turn, or where the tenants are much depressed; but there are marked exceptions to these general statements, and the adoption of a cash or produce basis for rental is largely a matter of custom. The produce system has both disadvantages and merits: it opens the door to much fraud, uncertainty, and oppression; but on the other hand, it apportions the rent exactly to the produce, and thus avoids the severity with which a fixed cash rent must fall upon a tenant in years of scarcity.

Influence of custom on rents. As to the incidence of the rents generally, this may be said to depend on the interaction of three forces—custom, competition, and legislation. In the early days of British rule custom was everywhere paramount, and even now the influence of competition is comparatively restricted. A rise of prices, for instance, even in unfettered tenancies, does not necessarily entail a concurrent rise in rents: the rental in such cases rises, as a rule, considerably after prices and by no means in exact conformity with them. The rent legislation of India has this special characteristic, that it starts from a basis of custom and, while accepting the legitimate influence of competition, seeks to confine that influence within reasonable limits. It aims not so much at the curtailment of advantages naturally accruing to landlords, as at the maintenance of rights already conferred on tenants by custom. Custom is therefore still, to a large extent, the foundation of Indian rents, and the presumptions of unfettered competition, which pervade the standard economic conceptions of rent, can only be applied with large reservations to existing conditions in India.

Considerations affecting prices of food-grains. The chief factor in determining the price of food-grains has been, and will continue to be, the out-turn of the crops; for as India is dependent for food on its own resources, a considerable deficiency of the supply, either actual or anticipated, must always send up prices, and it is an economic law that the increase of price is in much greater proportion than the deficiency in supply which causes it. The increase of population, and consequent pressure on the land, would operate, through

the law of diminishing returns, towards a permanent increase in the price of food even though the area under cultivation expanded in the same proportion; and the demand for export has undoubtedly influenced the price of rice and wheat directly, and through them the price of the commoner food-grains. Thus, a remarkable fall in the price of food-grains in the United Provinces in the year following the severe famine of 1896-7 was assigned by the local officials to the small export demand for wheat. The steadying of prices by increased facilities of transport must, as already stated, result in raising the general level. Another general cause which would produce a higher range of prices is an inflation of the currency; and it is at least a noticeable coincidence that at the periods from which prices took an upward turn, namely, from about 1860 and again from about 1886, there was a great influx of silver and a large addition to the coinage.

Payment of wages in kind. As regards agricultural labour, the system of payment in kind is still widely prevalent. Occasionally the labourer may be a bondservant, for traces of the old system of agricultural bondage still remain, and in this case he gets a regular subsistence with small perquisites. Ordinarily a farm labourer is fed, or gets a certain fixed ration of grain, in return for regular service. He receives perquisites in the shape of an occasional piece of cloth, an advance or small gift to meet marriage expenses, and sometimes a small cash wage, and he may be housed by his employer. Casual hiring may be for a particular season or operation, as for the harvest, or for a daily wage; but in most rural tracts the remuneration is wholly or partly in grain, or a cash wage is supplemented by one or two free meals. In some cases the remuneration given for certain agricultural operations is a percentage of the crop. The regularity of employment also differs greatly, and in several Districts labourers are regularly without work for three or four months, so that their average earnings must be calculated on what they receive during eight or nine months of the year. In many parts, also, landless labourers are not numerous, and those who work for hire supplement by wages the income derived from a small plot of land. Village artisans and domestic servants are also commonly paid in kind, and the former often possess land. There appears to be a desire on the part of employers to substitute

cash for grain wages, as the price of grain rises ; but, speaking generally, cash wages are still commonly paid only in the vicinity of towns or industrial villages, and by large employers of industrial labour.

Variations of wages. An average wage for India generally, or for a single Province, has little meaning, as wages vary greatly according to locality. Thus, in Bengal wages are high in the east, where the peasantry are prosperous and considerable affluence prevails ; they reach a lower level in the central Districts, except where the prevalence of malarial fever has checked the growth of population ; and in the congested Districts of Bihār they sink very low. Bengal is not peculiar in this respect, for a low and non-progressive scale of wages will be found in all parts of India where agriculture is the chief occupation and the density of the population causes pressure on the means of subsistence. But wherever a demand for labour has been caused by large undertakings, such as railways or canals, wages have risen. The establishment of mills and factories in many towns throughout the country, and the development of mining and other industries, have exercised a similar influence, illustrating the economic theory that wages depend mainly on the demand and supply of labour. It follows that high prices do not always invoke high wages.

In fact, the most direct connexion between prices and wages in India, and that which takes effect most rapidly, is the reduction of wages in times of scarcity, when food is also inordinately dear. The failure of the crops destroys a large portion of the fund used in paying wages, and the numbers seeking employment are greatly enhanced, so that those who find it often obtain in return the barest subsistence. When, however, a rise in the price of agricultural produce is due to a larger demand, and extra profits are thus obtained by the cultivator or landowner, wages may and do rise. The great boom in cotton during the American Civil War, and the profitable cultivation of jute in Eastern Bengal, are examples of this. As to payments in kind, in so far as the labourer receives the same quantity of grain, his real wages are unaffected by a rise in its price, unless he can save a portion and thus make a profit by selling it ; but it must be borne in mind that, in the case of casual labour, remuneration in kind, like a cash wage, is affected by competition. In the Central Provinces, which

have suffered during the last decade from two great famines and several bad seasons, there is a tendency for wages paid in grain to decrease, either in actual amount or by change from superior to inferior kinds of grain.

LESSON 33. FAMINE

Causes of famine. Famine is a disease of all agricultural countries. India is, and always has been, mainly agricultural, and agricultural under conditions peculiarly exposed to famine. The soil is parcelled out in minute farms. The farmers have no capital and depend on unorganized local credit, which shrinks when harvests fail. Off the land, but dependent on it, are millions of agricultural labourers, the vast majority of whom have only casual employment and are thrown out of work when harvests fail. Thus the masses of the Indian people depend upon the harvests, and these depend upon a periodic, but by no means regular, rainfall. But not every failure of the rains causes famine. The people are not generally dependent on the out-turn of a single harvest. The railways have put the whole food-supply of the country into circulation. The cultivators have some resources and credit. The spring harvest may be good although the autumn harvest has failed. The agricultural labourers are safe so long as there is a demand for labour, and there are varying degrees of crop failure with varying effect upon the labour market. A widespread failure of either harvest will cause distress, especially to the agricultural labourers; but it depends on several conditions, such as the character of preceding harvests, and the degree in which agricultural operations are affected, whether the distress will amount to famine.

The famine problem. Formerly war, rapine, and misrule were direct causes of famine. These have disappeared and in the process a new problem has arisen. Peace has multiplied the people. The custom of the country favours early marriage, while the general security has removed the old checks on population. And as those who have least hope in the world usually bring most children into it, the increase of population has been great among the poorer cultivators and the agricultural labourers. The modern outlets, emigration, and industrial development, afford as yet little relief. Large tracts



MAN SINGH OF JODHPUR.
(From a portrait by Jiwan in the possession of Col. Hendley, C.I.E.)

in India still await population, but the inhabitants of congested districts will not move to them, partly from habit, but largely from regard to caste and language. Industries are growing up, but as yet they draw only small numbers off the land, occupation being still prescribed by inheritance and tradition. Pressure, therefore, increases where it is already greatest. Holdings already small are subdivided, or sublet at competition rents, while the supply of agricultural labour outruns the demand for it, and so keeps agricultural wages low. This is the great famine problem. It is not in the power of man to prevent drought in India, or, so long as the country is mainly agricultural, to prevent drought from causing famine: all he can do is to restrict and mitigate the resultant suffering. Modern famine policy is thus a struggle against nature. As such it has two objects, the one remedial, the other protective. It seeks to relieve distress when distress comes; and it seeks in many ways to fortify the people against drought.

Modern relief policy. The carrying out of the modern relief policy is beset with many and great practical difficulties. These have, however, in great measure been overcome. Under the stern but efficient teaching of experience, an elaborate system of relief has now been worked out. Philanthropists may still mourn that complete success has not been attained; those who are acquainted with Indian conditions will perhaps rather marvel at the progress already made. It may fairly be said that, in spite of inevitable defects, a modern Indian famine campaign is one of the most remarkable achievements in history of scientific administration.

Standing preparations. Standing preparations are made on a large scale in ordinary times. The Government is kept informed daily of meteorological conditions, weekly of crops and prices, and monthly of birth and death rates. Programmes of suitable relief works are revised annually in every District. The country is mapped out into relief-circles of convenient size. Reserves of tools and plant are stocked, and lists of persons suitable on emergency for famine establishments are annually drawn up. In short, every effort is made so to arrange matters in advance that a telegram from head-quarters can mobilize relief.

Danger signals. When the rains fail, preliminary inquiries are started; a forecast of the probable crop failure is

made ; and a careful look-out is kept for the regular danger signals of approaching distress. Prices begin to rise and the people become uneasy. Aimless wandering in search of work takes the place of the seasonal movement of labour which attends a normal harvest. Private charity in the villages contracts, and the habitual paupers who depend upon it drift to the towns. Petty crimes against property increase ; credit becomes more difficult ; and grain-dealers make large purchases. During this period of tension the local officers look to their programmes of relief and prepare for action.

Preliminary action. As the uneasiness is intensified, the Government makes the necessary financial arrangements and declares its general policy. At this stage great importance attaches to 'moral strategy'. In an Eastern country hope turns quickly to despair, and despair shades off insensibly into a dull resignation. Accordingly, meetings are held ; policy is explained ; non-official gentlemen are encouraged to be active, especially in undertaking local improvements which will employ labour ; committees are appointed to stimulate and organize private charity ; village inspection begins, and preliminary lists of helpless persons who may require gratuitous relief are made. All this gives confidence to the people, who are further encouraged by liberal advances of money for wells and work in the field, and by detailed inquiries as to crop failure which are undertaken at this stage with a view to suspension of revenue. If the number of paupers in the town is great, poorhouses are opened.

The period of test. Test works are also started. This is an anxious stage. If the tests are too lenient the state may be led on to unnecessary expenditure ; if they are too strict the situation may not be grasped. The condition of those who seek employment on the test works is closely watched, and a look-out is kept by village inspection on the condition of those who stay in their villages. At this, as at every stage, the death-rates are scrutinized.

The period of general relief. When the test works, or village inspection, disclose real distress, relief works are opened, the village inspecting staff is increased, the lists of persons entitled to gratuitous relief are revised, and the distribution of gratuitous relief begins. By the end of December in a famine year the numbers on relief are as a rule

large. The gathering of an intermediate crop like sugar-cane may reduce them slightly, but generally they continue to rise till the following March. The great spring festival, the Holi, the reaping of the spring harvest (if there be one), and the ripening of the *mahuā*, or of the mango, crops usually draw off many relief workers for a time: these mostly return, however, by the end of April. In May distress reaches its maximum, and cholera generally breaks out.

Cholera. An outbreak of cholera is the supreme test of organization. In the Pānch Mahāls District of Gujarāt, in 1900, cholera broke out suddenly with extraordinary virulence. In three days the dead numbered thousands and the people fled panic-stricken all over the country, spreading the disease. The native staff and camp attendants deserted in large numbers, and the European officers were left to collect with their own hands and burn some hundreds of corpses. Famine history is lit up by acts of self-sacrifice, and devotion even to death, but it records no nobler work than that performed by the European officers on this occasion.

The beginning of the end. Policy changes somewhat with the advent of the rains. Relief works are generally closed, and there is an extension of local gratuitous relief. In the interests of the country at large, and of the people themselves, it is important that ordinary agricultural conditions should be restored with the least delay, and that as large an area as possible should be sown. For this purpose the people are moved from the large works to small works near their villages at the end of May, and liberal advances are made to agriculturists for the purchase of plough cattle and seed. When the rains break relief-workers return to their fields in crowds; if any stay on the works they are encouraged to return to their villages as soon as the demand for labour springs up. A few relief works are kept open in case of need, and every one who cannot work and requires relief receives it gratuitously.

Closure of relief. When the earliest of the principal autumn crops is ripe, the few remaining relief works are closed gradually, and gratuitous relief is discontinued, the recipients being given a valedictory dole, and by the middle of October famine is ordinarily at an end. Quinine is distributed in large quantities during September and October, in anticipation of fever, which generally prevails in the autumn.

Charitable relief funds. The strictness of Government relief, which must inevitably be confined to the provision of necessities, is softened and supplemented by private relief funds, to which it may be said that almost the whole world subscribes. These subscriptions are devoted to four principal objects, of which the last absorbs about two-thirds of the whole: (1) providing small comforts of food or clothing to the aged, infirm, sick, children, and others in need of them; (2) helping orphans; (3) relieving the respectable poor in ways acceptable to them; and (4) giving a fresh start in life to those who have lost everything in the struggle. Thousands of desolate homes have been restored by this splendid charity.

The Indian people's famine trust. In 1900 the Mahārājā of Jaipur presented 16 lakhs of Government securities to be held in trust for the relief of the needy in times of famine. This trust has now (1905) 30 lakhs in Government securities, the greater part of which has been contributed by the founder and his family. It is vested in a body of trustees selected from all parts of India, and the income will be devoted, in times of famine, to objects similar to those of the charitable relief fund.

Protection against famine. The famine problem is not, however, limited to relief. 'It is of still more essential importance,' said the Secretary of State in 1878, 'to ascertain how far it is possible for Government by its action to diminish the severity of famines, or to place the people in a better condition for enduring them.' The Famine Commission of 1880 concluded that much could be done in this direction, particularly by the accumulation of accurate knowledge of the country and its economic conditions, with the ultimate object of stimulating the material prosperity of the people; and much has been done.

System of intelligence. Reference has already been made to the elaborate system of agricultural intelligence, but this represents but a part of progressive knowledge. Geological, mineralogical, ethnological, and linguistic surveys have been set on foot, while valuable statistics of trade are annually published and reviewed in the Department of Commerce. Vital statistics are still defective, but each successive Census marks improvement in their registration. The functions of Government have been differentiated, the branches of the

administration have been specialized, and action has been taken simultaneously on many lines.

Productive and protective public works. Railway and irrigation works—the best, and often the only, means of securing protection from the extreme effects of famine and drought—have always been the mainstay in building up material prosperity. From the financial point of view, these works are of two kinds, according as they are, or are not, commercially profitable, the former being called productive, the latter protective. The cost of the former is met by loans; the latter are debitable to the Famine Insurance Grant. This grant dates from the famine of 1876. The first charge on the grant is famine relief, the second protective works, and any balance is devoted to the reduction, or rather the avoidance, of debt.

Effect of railways and irrigation. It remains to consider the effect of railways and irrigation on material prosperity. The benefits of irrigation have never been disputed; but of late there has been a tendency in some quarters to detract from the advantages of railways. It is contended that, by equalizing prices all over India, railways extend the area of distress beyond the limits of crop failure, and that they have destroyed the habit of storing grain, which formerly served as an insurance against famine. This may be admitted, without really qualifying the overwhelming benefits of improved communications. If railways have somewhat extended the area, they have enormously reduced the intensity, of distress; and if they have discouraged the storage of grain, they have substituted ‘the great reserves of the country at large for the petty reserves of individuals’.

PART IV. ADMINISTRATIVE

LESSON 34. THE GOVERNMENT OF INDIA

Periods in the history of British India. The history of British India falls into three periods. From the beginning of the seventeenth to the middle of the eighteenth century the East India Company is a trading corporation, existing on the sufferance of the native powers and in rivalry with the merchant companies of Holland and France. During the next century the Company acquires and consolidates its dominions, shares its sovereignty in increasing proportions with the Crown, and gradually loses its mercantile privileges and functions. After the Mutiny of 1857 the remaining powers of the Company are transferred to the Crown, and then follows an era of peace in which India awakens to new life and progress.

One noticeable feature of the history of British India is that the tide of conquest never turned against the East India Company. Once it had taken a province under its direct administration it was able to ensure permanent peace to the inhabitants, however distracted might be the condition of those parts of India which had not been brought under its sway. From this most important circumstance it followed that the building up of the administrative system proceeded almost without interruption from the days of the Company's earliest conquests.

Transfer of the government to the Crown. It was the catastrophe of the Mutiny which enforced the conviction that the administrative functions of the Company must cease to exist, and that the Sovereign must stand forth as the sole source of government, both in India and in England. The legislative measures required to accomplish this change are contained in the Act of 1858, which transferred the government, territories, and revenues from the Company to the Crown, declared that India was to be governed by and in the

name of the Sovereign, authorized the appointment of an additional Principal Secretary of State, and created the Council of India. Immediately on the passing of this Act, Queen Victoria issued a Proclamation 'to the Princes, Chiefs, and People of India', notifying that she had taken upon herself the government before administered in trust for her by the Company, appointing the Governor-General (Lord Canning) to be her first Viceroy, and announcing her acceptance of all treaties and engagements made by the Company with the Native Princes of India. A further recognition of this transfer of government, and of the peculiar position held by the Crown in India, was made in 1876, when the Sovereign was empowered by Act of Parliament to make an addition to the royal style and title appertaining to the 'imperial' crown. Queen Victoria thereupon assumed the title of Empress of India, and a proclamation to that effect was made in a Durbār held at Delhi on January 1, 1877. Since that time it has been customary in India to use the style 'Queen-Empress' and 'King-Emperor', though there appears to be no definite authority for the practice.

The designation 'Viceroy'. The designation 'Viceroy' has no statutory authority, and has never been employed by Parliament. It originated in the Proclamation of 1858, which announced the assumption of the government of India by the Crown, and in so doing referred to Lord Canning, who had already been appointed Governor-General by the retiring Board of Directors, as the 'first Viceroy and Governor-General'. None of the Warrants appointing Lord Canning's successors refers to them as 'Viceroys'; and the title, which is frequently employed in Warrants of Precedence, in the statutes of the Indian Orders, and in public notifications, appears to be one of ceremony, which may most appropriately be used in connexion with the state and social functions of the Sovereign's representative, for the Governor-General is the sole representative of the Crown in India. The salary of the Viceroy is $2\frac{1}{2}$ lakhs of rupees per annum.

The Provinces. British India, or the territory under the control of the Governor-General in Council, is divided into eight large Provinces and five lesser charges, each of which is termed a Local Government. The eight major Provinces are the old Presidencies of Madras and Bombay; the five



Photo. Gillman & Co.

LORD CURZON OF KEDLESTON,
In his robes as Chancellor of the University of Oxford.



BARON HARDINGE OF PENSHURST,
Viceroy of India, 1910-.

Photo. Lafayette



QUEEN VICTORIA.

Lieutenant-Governorships of Bengal, the United Provinces of Agra and Oudh, the Punjab, Burma, and Eastern Bengal and Assam; and the Chief-Commissionership of the Central Provinces. The minor charges are the North-West Frontier Province, British Baluchistān, Coorg, Ajmer-Merwāra, and the penal settlement of the Andaman Islands.

The Provinces of Madras and Bombay comprise the territories which were originally attached to those Presidencies. Sind was added to the latter Province a short time after its conquest in 1843. The Presidency of Agra was constituted, in a modified form, as the Lieutenant-Governorship of the North-Western Provinces, in 1836. Later, in 1854, a Lieutenant-Governor was appointed to Bengal (including Bihār and Orissa), which had hitherto been administered directly by the Governor-General. The Punjab, after its annexation in 1849, was first governed by a Board of administration, and afterwards by a Chief Commissioner. After the Mutiny, Delhi and the neighbouring country was transferred to it from the North-Western Provinces, and it became a Lieutenant-Governorship in 1859. On the annexation of Oudh in 1856 a Chief Commissioner was placed at the head of the executive government, and in 1877 this charge was merged in the Lieutenant-Governorship of the North-Western Provinces. The latter name had become meaningless after the annexation of the Punjab, and the official title of this part of India has been changed to the 'United Provinces of Agra and Oudh'.

Burma was the next to be created a Lieutenant-Governorship. Arakan, Tenasserim, and Pegu were at first ruled by separate Commissioners under the immediate control of the Government of India. In 1862 they were amalgamated into the Province known as British Burma and placed under a Chief Commissioner. Upper Burma was added to the Chief Commissionership on its conquest in 1886, and the whole Province was thenceforward styled Burma and was raised to the status of a Lieutenant-Governorship in 1897. The Central Provinces were formed into a separate administration, under a Chief Commissioner, in 1861, by detaching the Saugor and Nerbudda territories from the North-Western Provinces and uniting them to the districts which had lapsed on the death of the Rājā of Nāgpur in 1854. Assam, on its annexation in 1826, was added to Bengal; in 1874 it was detached and

placed under a Chief Commissioner. In 1905 Assam, with a large portion of Bengal, was constituted a new Lieutenant-Governorship, under the style of 'Eastern Bengal and Assam'.

The North-West Frontier Province was created in 1901. It comprises certain Districts which were detached from the Punjab in order that the Government of India might exercise more direct control over the frontier questions to which they give rise, with a number of adjoining border tracts over which our direct influence has been extended since 1892. British Baluchistān was formed into a Chief Commissionership in 1887. The petty principality of Coorg, annexed in 1834, is administered by the Resident in Mysore. The Agent to the Governor-General in the Rājputāna States is Chief Commissioner of the small British territory of Ajmer-Merwāra, the greater part of which was obtained by cession, from the Mahārāja Sindhia in 1818. The Superintendent at Port Blair, which has been a convict settlement since 1858, is also Chief Commissioner of the Andaman and Nicobar Islands. Berār (formerly known as the Hyderābād Assigned Districts) still appertains to the Nizām, but has been administered by the British Government through the Resident at Hyderābād since 1853, and was recently taken over on a perpetual lease, the Nizām receiving an annual payment of 25 lakhs from its revenues. Since October, 1903, it has been attached, for administrative purposes, to the Central Provinces.

Regulation and non-regulation Provinces. The original method of legislation in British India, up to 1834, was by Regulations issued by the executive Councils of Fort William, Fort St. George, and Bombay. Some of the early Regulations were in many respects complicated and intricate, and it was soon realized that they were not suited to all the Indian races. The various territories subsequently embodied in the North-Western Provinces were, on their annexation, included in the Bengal Presidency and governed under the Bengal code; but the less advanced Provinces acquired at a later time were generally ruled in accordance with simpler codes, based on the spirit of the Regulations but modified to suit the circumstances of each special case. The Provinces were thus distinguished into 'regulation' or 'non-regulation', in accordance as they were originally administered under Regulations framed

under the Charter Acts or under less formal codes. But, with development in material progress and in legislative activity, the distinction between the more advanced non-regulation Provinces and their regulation sisters has practically disappeared, except as regards certain differences in administrative arrangements; and so far as legislation is concerned the contrast is no longer between the old regulation and non-regulation areas, but between backward tracts for which the Government of India can still legislate executively and the rest of British India where the machinery of a Legislative Council is required. The regulation Provinces are Bengal, Madras, Bombay, and Agra.

Control of Parliament. Parliament is supreme over India, as over all dominions of the British crown. Apart from those attributes of sovereignty which are derived from the royal prerogatives or which may have been inherited from the Mughal Empire, the general constitution of the government, both in India and in England, has been created and regulated by Act of Parliament. The functions of the Governor-General, especially in relation to his Council and his control over the subordinate Presidencies, the powers of all local legislatures and the restrictions on these powers, the constitution and jurisdiction of the several High Courts, the very existence of the Secretary of State and his Council—all alike are based upon statutory enactments. The revenues of India are not under the control of Parliament, though they may not be applied to defraying the expenses of military operations beyond the frontier without the consent of both Houses, except for preventing or repelling actual invasion or under other sudden and urgent necessity. Inasmuch as the Home charges are entirely defrayed from the revenues of India, the salary of the Secretary of State and the expenses of his establishment are not included in the annual estimates voted by the House of Commons. It is, however, provided that detailed accounts of receipts and disbursements, in India and in England, shall be laid before Parliament annually, together with a report exhibiting the moral and material progress of the country. The Home accounts are further subject to examination by an independent Auditor, whose report has likewise to be presented to Parliament every year. Finally, in accordance with constitutional practice, the Secretary of State, as a minister of

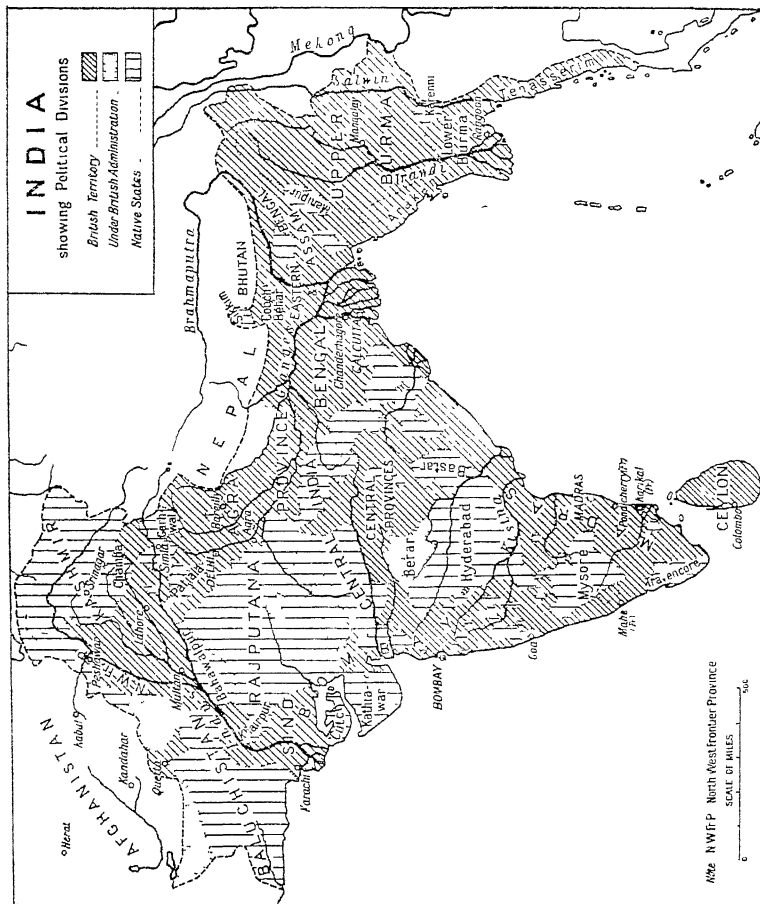
the Crown, is responsible to criticism, and if occasion should arise to censure, in either House of Parliament; and this responsibility is shared with the Cabinet, of which he is always a member.

LESSON 35. ADMINISTRATIVE DIVISIONS

Territorial subdivisions—Districts. The system of administration in both regulation and non-regulation Provinces is based on the repeated subdivision of territory, each administrative area being in the responsible charge of an officer who is subordinate to the officer next in rank above him. The most important of these administrative units is the 'District'; and the most accurate impression of the system may be gained by regarding a Province as consisting of a collection of Districts, which are usually split up into subdivisions and these again into smaller circles.

British India contains more than 250 Districts. The average area of a District is 4,430 square miles, and the average population 931,000. The actual Districts vary greatly in size and density of population. For instance, the Upper Chindwin District of Burma has an area of 19,000 square miles and a population of 153,000; Mymensingh, in Bengal, has an area of over 6,000 square miles, and a population of nearly 4,000,000; and Vizagapatam, in Madras, has an area of more than 17,000 square miles and a population of nearly 3,000,000. Among the major Provinces the Districts are largest in Burma and Madras, and smallest in the United Provinces.

The Collector-Magistrate. In Madras there is no local officer above the head of the District. Elsewhere a Commissioner of Division is intermediate between the Collector and the Government or the Board of Revenue. The head of the District is styled in the regulation Provinces Collector and Magistrate. He is the representative of Government in the large area under his charge; in the eyes of the people he embodies the power of the state or 'Sarkār', and it is to him that they primarily look to redress their grievances and to promote their welfare. His twofold appellation indicates that he is both the principal revenue official and the chief



magistrate. At one time the two offices were separate. The Collector dates from the time of Warren Hastings, when the British first took over the fiscal administration of Bengal, Bihār, and Orissa. Many years ago, in the United Provinces, Madras, and Bombay, the magisterial and revenue functions were combined in the same hands, and the same process took place at a later date in Bengal.

The non-regulation Provinces. The extent to which the non-regulation system diverges from that of the regulation Provinces varies in different Provinces in accordance with their importance and the progress which they have made. The superior officers of the general branch of the service form the 'Commission' of the Province. It is an important point of difference from the regulation system that the higher posts are not wholly reserved to the Indian Civil Service. The executive head of the District is styled 'Deputy Commissioner' and not Collector; those of his subordinates who belong to the Commission are called 'Assistant Commissioners', and members of the Provincial Service 'Extra Assistant Commissioners'. With the exception of Oudh, which is under the United Provinces Board, none of the non-regulation Provinces has a Board of Revenue. In the Punjab and Burma the functions of the Board are exercised by a single officer called the Financial Commissioner. The District administration—revenue, general, and magisterial—runs on the same lines as in the regulation Provinces; but the District Magistrates and some of their first-class subordinates exercise more extensive criminal jurisdiction. Moreover, in the less advanced Provinces administrative and judicial functions are frequently combined. In the Punjab and Lower Burma there are Chief Courts, consisting of several judges appointed by the Governor-General in Council, and approximating in their constitution and powers to the High Courts of the regulation Provinces. In Upper Burma, the Central Provinces, Oudh, and Sind the ordinary functions of a High Court are exercised by one or more officers styled Judicial Commissioners.

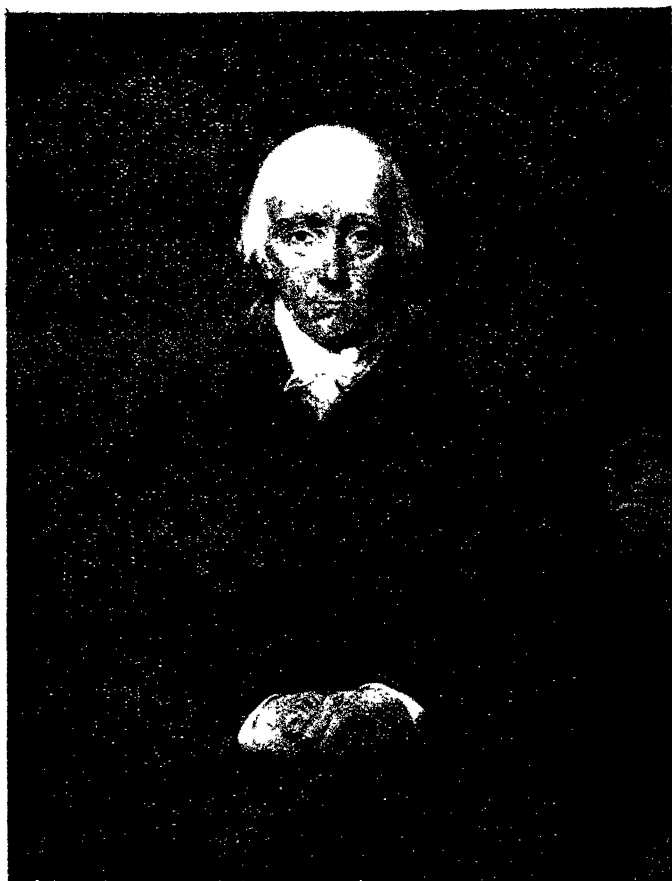
The minor Provinces. The North-West Frontier Province is administered on the lines of the parent Province of the Punjab. The Chief Commissioner is also Agent to the Governor-General for political relations with the frontier

tribes. His principal officers are a Revenue and a Judicial Commissioner, who correspond, in a measure, with the Financial Commissioner and Chief Court of the Punjab. The Province of Baluchistān is made up of (1) British Baluchistān, comprising three Districts; (2) the Agency territories, which consist of districts held on lease; and (3) the Native States of Kalāt and Las Bela. Under the Chief Commissioner is an officer who is both Revenue and Judicial Commissioner. For the District of Coorg the Resident in Mysore is both Chief and Judicial Commissioner. Ajmer and Merwāra are administered by a Commissioner under the Agent to the Governor-General in Rājputāna. The Andaman and Nicobar Islands derive their administrative importance from the circumstance that the Penal Settlement of Port Blair is situated in the former. The Superintendent of the Settlement is also entrusted with the general administration of the islands, and maintains relations with their wild aboriginal inhabitants.

LESSON 36. THE NATIVE STATES

Introductory. The political horizon of the Government of India lengthens out far beyond the external frontiers of British dominion. It maintains the peace and safety of the seas that wash the Indian coasts; it watches the movements of sea-borne trade and the commercial tariffs of its neighbours; it studies the course of events on the borders of Siam, Tongking, China, Russia, and Persia; it protects the rulers of islands and maritime districts in the Persian Gulf and the Arabian Sea; and it maintains a fortified outpost at Aden, surrounded by a belt of protected territory. In this chapter our attention will be confined to those States or territories which are not subject to British law, and yet lie within the outer line that the hand of diplomacy has drawn as the boundary of India upon the map of Asia. The countries thus mapped off, whether ruled by single chiefs or tribal organizations, fall under the general designation of the Native States of India, although some of them, such as Nepāl, differ in the measure of independence which they enjoy, and in other material respects, from the principalities of the interior.

Outer limits of the Indian Empire. The diplomatic line



WARREN HASTINGS.

which has been mentioned as including all the States of which an account is here given, stretches from Gwetter Bay, in the Gulf of Oman, to the Mekong river, near latitude 22° N. and longitude 101° E. Its extreme point on the north is Povalo Schveikovski on the Taghdumbāsh Pāmīr, a little north of 37° N., while its southern limit is Victoria Point (below 10° N.) in the Mergui District of Burma. The principal conventions with foreign powers which have established this international cordon round India are those with Persia in 1871 and 1895; with Afghānistān in 1893 and 1895; with Russia in 1895; with China in 1890, 1894, and 1897; with France in 1896 and 1904; and several engagements with Siam extending from 1868 to 1894.

The Native States are in 'India', but not in 'British India'. India, lying within the limits thus defined, consists of two parts, British India and the territories of Native chiefs, or to use the more common phrase, Native States. Parliament in the Interpretation Act of 1889 has adopted the following definitions: 'The expression British India shall mean all territories and places within Her Majesty's dominions which are for the time being governed by Her Majesty through the Governor-General of India, or through any Governor or other officer subordinate to the Governor-General of India. The expression India shall mean British India, together with any territories of any Native Prince or Chief under the suzerainty of Her Majesty, exercised through the Governor-General of India, or through any Governor or other officer subordinate to the Governor-General of India.'

What is a Native State? We may say, then, that the Native States consist of territory in India, not being within His Majesty's dominions yet under his suzerainty, which in the case of 175 States, including those of the greatest importance, is exercised by the Supreme Government, and in the case of the remainder, numbering about 500, is entrusted to the Provincial Governments. The most obvious test of dominion is supplied by the constant action of courts of law. In whose name do writs run and in whom is jurisdiction over the territory vested? The courts of British India rest upon the law of Parliament and the legislative powers which that law has entrusted to British authorities in British India, whereas the courts which administer justice in any Native

State exist under the authority of the ruler of that State. The jurisdiction sometimes exercised by the Government of India in a protected State is, from the British-Indian point of view, extra-territorial, and is part of the internal sovereignty of the State, in which the British Government has a share by treaty, cession, or other lawful means. Its existence does not convert suzerainty into dominion. Whether or not a so-called Native State is what it professes to be is a question of fact which, in the absence of a legal decision, must be settled by the present action of the British paramount power. If the persons who reside in the territorial area, not being by birth or naturalization British subjects, are treated by the courts of India as foreign subjects, it may be concluded that the country to which they belong is a Native State.

The Sovereign is alone independent. The position of the territorial chief, or ruling authority, is of less importance. The status of the territory and not that of the ruler is the essential point. The generally accepted view is that sovereignty is divisible, and that the attributes, such as the right to make war or peace, the right of foreign negotiation, the right to legislate, the right to administer civil and criminal justice, and so forth, are capable of division. The sovereign who enjoys all these rights is alone independent, and in India the accepted suzerainty of the British Crown involves a partition of the aggregate of such powers between the suzerain and the prince. Accordingly no ruler of a Native State can be described as 'independent'.

British policy a departure from previous practice. The British gained little help from their predecessors in solving the difficult problem of maintaining friendly relations with the Native princes. The foundations of the present political system are not rooted in the past. The administration of the country under the direct dominion of the King-Emperor owes much to former rulers of India, and particularly to the genius of Akbar; but the protectorate is almost exclusively the creation of the last century and a half, and has been built up, like British India itself, out of the ruins left by the Mughal empire. The Marāthās, who for a few years seemed likely to succeed to that empire, had no idea of respect for the rights of others, or of duty even to their own subjects. They used their armed forces to extract revenue at the spear's point, and

regarded suzerainty as merely conferring upon them the right to levy *chauth* or a fourth part of the revenue. It was reserved for the clear-headed merchants from London, working up from the sea-coast, to succeed where their predecessors had failed, and to show that they were as able to maintain the rights of the Native States as they were to administer their own dominions.

General conclusions. This is not the place for any attempt to weigh the comparative merits of administration in British Provinces and in Native States, or to forecast the development and future prospects of the latter. While the paramount power steadfastly maintains the rights of Native rulers, lends them the services of its own trained officers, renders them help in time of famine, and admits them and their subjects to its coveted honours and distinctions, it must look to them to reform their administration and act the part of good neighbours. The institutions of Native States are becoming profoundly modified, under modern conditions of communication, by infiltration from what is proceeding around them in British India. All are not, it is true, equally able to assimilate new principles. Their forms of government are almost as various as the races ruled by them. There are States in almost every stage of development, tribal, feudal, and constitutional; but the common features of all of them, even of those which are most advanced, are the personal rule of the chief and his control over legislation and the administration of justice.

There is, however, an increasing tendency to follow British models in financial arrangements and educational systems, while many States have adopted civil and criminal laws from the codes of British India. Great stress is now laid upon the education of the sons of chiefs, and upon the proper administration of States during a minority. Chiefs' colleges have been founded at Ajmer, Rājkot, Lahore, and Indore, where a special course of instruction is provided. Tutors and guardians are appointed to take charge of young chiefs not at those colleges, and an Imperial Cadet corps has been established for the military training of scions of ruling and noble families. Lastly, every effort is made to encourage friendly relations between the rulers and their Political Agents, and also with the heads of Local Governments. The Viceroy constantly

visits the Native States, invites the chiefs to participate in state ceremonies, such as the great Darbār at Delhi in 1903, and encourages them to visit him at Calcutta, where a house has recently been purchased for their special accommodation.

LESSON 37. FOREIGN RELATIONS

Spheres of the Company's authority outside India. So long as the East India Company largely managed its own affairs, the sphere of its foreign relations was more extensive than that which now falls to the Government of India. When the Dutch and the British fell out in India, their contests were not confined to the soil of Bengal or Madras. Thus the Madras Government concluded in 1795 a treaty of alliance with the King of Kandy, and in the following year assumed the government of the Dutch settlements in Ceylon. Kandy was annexed in 1815, and the sovereignty over the whole island was then vested in the Crown. The Company took possession of St. Helena in 1658, but the Dutch recovered it in 1671. Upon the restoration of British authority in 1673, the king regranted the island to the Company as lords proprietors, subject to allegiance to His Majesty, and the Court of Directors appointed the Governor and Council and administered the possession until 1834. Lord Wellesley's projects against Mauritius and Batavia, and his dispatch of an Indian force to Cairo in 1800, afford other instances of the wide conception entertained by the Governors-General of Indian responsibilities and foreign interests. The Straits Settlements were under the Company's rule, and were transferred to the Colonial Office as recently as 1867. Penang, afterwards called Prince of Wales Island, in the Straits of Malacca, was acquired by treaty with the King of Khedah and was taken possession of, in 1786, under the authority of the Bengal Government. There, too, the administration was entrusted to a Governor-in-Council. Lord Hastings sent Sir Stamford Raffles in 1819 to acquire Singapore, and this led to negotiations with the Dutch, which were conducted at home and concluded by a treaty in 1824. Under this treaty the British withdrew from Sumatra, and the Company ceded Bencoolen and its dependencies to the Dutch, who on their part transferred Chinsura and their factories at Balasore and

Dacca, and the settlement of Malacca, with undisputed possession of Singapore. In 1825 the Court of Directors united their three settlements at Prince of Wales Island, Singapore, and Malacca under a Governor-in-Council, subject to the Supreme Government at Calcutta. This part of the Company's administration opened the way to several engagements with the neighbouring chiefs. While the field of foreign relations was thus extended in the east, the Company was not less active on the coasts of Arabia and the Persian Gulf. Zanzibar was in direct relations with the Government of Bombay until 1872, when its affairs were transferred to the Government of India, from which they passed, in 1883, into the hands of the Imperial Government. On the east coast of Africa the authorities at Bombay concluded a treaty in 1827, at Berbera, with the Somāli Habar Awal tribe, and with Zeila and Tajūra in 1840. The charge of the Somāli coast was in 1898 transferred to the Foreign Office.

Present responsibilities outside India. At the present time the recognized and direct responsibilities of the Indian Government outside India are limited to Arabia, with the fortress at Aden and the adjoining protectorate; the islands of Perim and Sokotra, and the Kuria Muria islands; the Persian Gulf and parts of Persia; Afghānistān and Tibet; and, to a certain extent, China and Siam.

Foreign possessions in India. Within India itself little difficulty arises in connexion with the possessions of France and Portugal. French jurisdiction is now confined within the limits of Chandernagore, Pondicherry, Kārikāl, Mahé, and Yanam. The Indian possessions of Portugal are now limited to the territories of Goa, the small settlement of Diu off the coast of Junāgarh in Kāthiāwār, and Damān, which lies about 100 miles north of Bombay.

LESSON 38. LEGISLATION AND JUSTICE

British supremacy in relation to Native law. Except in the case of the island of Bombay, which was obtained through cession in full sovereignty from Portugal, wherever the English first settled in India they did so with the licence of a Native government, and the natural consequence would have been their submission to Native law. But there was, in the first



ADEN.

place, really no *lex loci* to govern the new-comers, for the idea of a territorial, as opposed to a personal law, is of European and modern origin, and the Shāstras and Korān alike know no local limits, but bind individuals united only by a common faith. In the second place, the law of nations clothes Europeans settled in the midst of races differing from them entirely in religion, manners, and habits, with the national character of the parent state, and recognizes their factories and plantations as exclusive possessions. Lastly, many of the provisions of the indigenous law of India were such as no civilized Christian race could enforce. Mutilation and stoning, for instance, are penalties incompatible with Western ideas; and equally so is the principle that the evidence of an infidel could not be received against a Muhammadan, or that there should be a privileged law for the Brāhman alone.

Accordingly the earliest charters assumed that the English had brought their own legal system with them, and that of 1726 introduced their common law and the older Acts of Parliament into the three Presidency towns as regards Europeans, by expressly directing that justice should be administered by the Company in accordance with the laws of England. At first the tendency of the English was to make their law public and territorial, and, on the establishment of the Supreme Court at Calcutta in 1773 and the advent of English lawyers as its judges, they proceeded to apply it to Europeans and Natives alike. The error of this course was, however, rectified by the passing of the Declaratory Act of 1780, by section 17 of which Parliament directed that, as against a Hindu, the Hindu law and usage, and as against a Muhammadan the laws and customs of Islām, should be applied. This wise rule, which had already been laid down by Hastings in Bengal, was repeated for the settlements at Madras and Bombay by a statute of 1797; it was incorporated in the old Regulations of Bengal, Madras, and Bombay; and it was extended by subsequent legislation throughout the Company's territories. In this way the British took the line of least resistance, and to it they have adhered, accepting and carrying on as far as possible what they found, and obtruding only so much of their own law as India from time to time became fitted to receive.

Codification. India has been the most successful field of

English codification, every important branch of the English law in force in the country, except that of torts, having been incorporated in the form, and reduced to the dimensions, of codes. By far the most important, as it is the best, of these is the Indian Penal Code (enacted in 1860), which embodies the whole of the substantive criminal law. The bulk of it was drafted by Macaulay, the first Law Member of the Governor-General's Council; and the most telling proof of its excellence is furnished by the fact that, although it has now been in force for over fifty years, it has required little amendment or amplification. Its provisions are based upon the criminal law of England, but the latter has been adapted to suit the circumstances of India. In India judges and magistrates are most frequently not professional lawyers, and to them codification must always be welcome. But, apart from this consideration, the work accomplished has, on the whole, benefited the country. The Penal Code is universally recognized as an unmixed gain; and the same may be said of the two Codes of Civil and Criminal Procedure.

Native agency predominant. The legal abilities of the natives of India have long been recognized, and in the agency provided for the administration of justice the native element largely predominates. The civil courts of grades below that of District Judge are, as a rule, presided over entirely by natives, and the same may be said of all but the principal magisterial courts. Eight natives of India now (1906) occupy seats on the benches of the chartered High Courts, and two are judges of the Punjab Chief Court. The most exalted judicial offices are, therefore, open to them; and the names of Dwārkā Nāth Mitter in Bengal, Muttuswāmi Ayyar in Madras, and Ranade in Bombay need only to be mentioned to prove that they have filled them with distinction.

Revenue courts. Side by side with the civil courts are revenue courts, presided over by officers charged with the duty of settling and collecting the land revenue. The interference of the civil with the revenue courts involves a question which has long been a vexed one in India. Lord Cornwallis began in 1787 by making the Collectors of revenue also Zila Judges, transferring all revenue cases to them in their dual capacity, and allowing an appeal only to the Board of Revenue and the Governor-General in Council. But after

the experience of six years he ended by adopting the principle that the Government should 'divest itself of the power of infringing, in its executive capacity, the rights and privileges which, as exercising the legislative authority, it had conferred on the landholders'. The pendulum has swung backwards and forwards several times since then; but, on the whole, it may be said that, so far as the assessment and collection of land revenue is concerned, and in purely fiscal matters, the civil courts are now generally excluded from interfering. On the other hand, all questions of title to land have been brought within the cognizance of the civil courts; rent suits, which were long triable by revenue officers alone, are in some parts of India, notably in Bengal, now relegated for disposal to the ordinary courts; and, where such suits are still dealt with by revenue officers, their procedure is assimilated to that of the civil courts, and recourse may be had to the latter on questions of title.

Union of executive and judicial functions. Another controversial matter is the union of executive with judicial functions. The unit of British Indian administration is the District, and the chief executive officer in each is the Collector-Magistrate or Deputy-Commissioner. He is the chief local magistrate, and is, as such, vested with extensive judicial authority. He is himself a magistrate of the first class, and can undertake such criminal work, original or appellate, as he chooses. To the Western mind the arrangement may seem anomalous; and it has been urged, not only that the Collector's judicial authority should be taken away, but that, in the subordinate ranks also, executive and judicial functions should be dissociated and assigned to different officers. On the other hand, the union is one to which the people of India are well accustomed, for it has existed from time immemorial in the East, and separation is the rule only of the most advanced Western countries. The matter has often been under consideration, and the question whether, or how far, the suggested separation is practicable is once more engaging the attention of the Government of India.

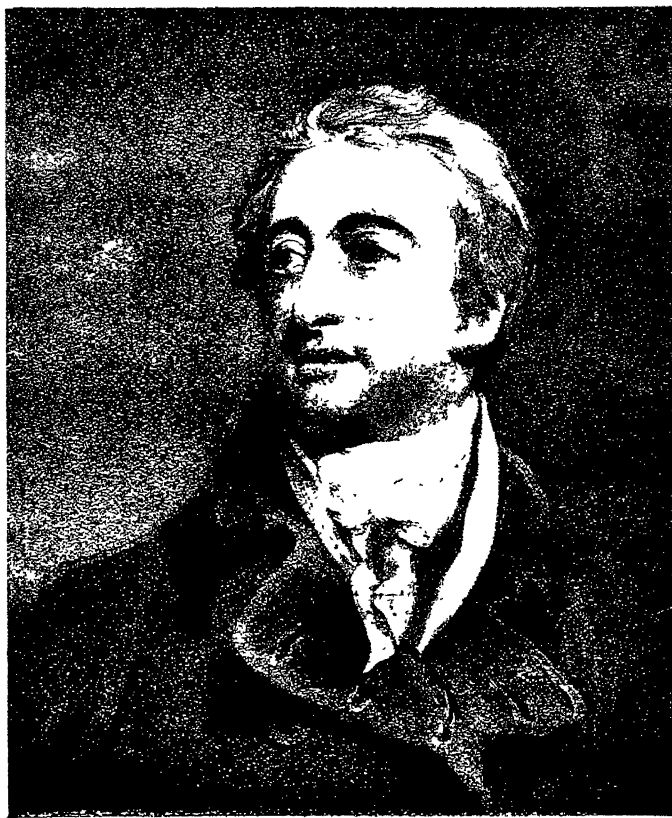
LESSON 39. FINANCE

The growth of revenue and expenditure. Two simple facts give the key to the special conditions of Indian finance. More than 90 per cent. of the population is rural and subsists mainly by agriculture. The total value of Indian imports and exports rose in the sixty years ending with 1903-4 from 28 to 246 crores of rupees. Although the population of India still consists in the main of a poor peasantry, great strides have been made in the development of her resources, and her national wealth is growing apace. This economic progress has been accompanied by an enormous rise in the revenues and expenditure of the State. The gross revenues of India amounted to 21 crores in 1840, to 43 crores in 1860-1, to 70 crores in 1880-1, and to 113 crores in 1900-1. These figures are given merely by way of general illustration: the acquisition of new territory and changes in the system of finance and accounts rob them of any claim to form a basis for accurate financial comparison. The expenditure incurred from these growing resources represents a complete revolution in the condition of the country.

Since the days of the Mutiny, India has been equipped with the apparatus of a modern civilized state. The courts of justice, the police, and the jails have been enormously improved. The emoluments of all classes of native officials have been raised, and an increasing share in the work of administration has been transferred to them. A wide system of public instruction has been developed; some three thousand hospitals and dispensaries bring medical relief within reach of the people; and large sums have been spent in improving the sanitary condition of towns and villages. Great systems of railways and irrigation works have been constructed, and the post-office and telegraph departments have been brought to a high pitch of efficiency. These are some of the most important changes which have taken place, but they by no means exhaust the tale. In many other directions measures have been carried out to improve the administration and benefit the people; and though much yet remains to be done, the general progress made during the half-century is sufficiently striking.

Causes of the growth of revenue. It may be asked whether so great and wide an activity, involving so large an increase of expenditure, is consistent with the condition of a country the bulk of whose inhabitants are admittedly poor and unable to bear an incidence of taxation such as prevails in modern Europe. There need be no hesitation in answering this question in the affirmative. The growth of revenue which has made this expenditure possible is due to increasing prosperity and better management, and not to the imposition of new burdens on the taxpayer. There is no considerable source of Imperial taxation now in existence which had not already been imposed in 1860, and in most cases the increase in the total receipts has accrued in spite of reductions in the rate of assessment. The incidence of the land revenue on the area of cultivation has been much diminished; the rate of import duties is smaller, and practically all export duties, except that on rice, have been abolished; the salt duty, the only obligatory tax paid by the masses, has been lowered for practically the whole population; the present income-tax is at a less rate, and has a higher minimum limit of assessment, than that imposed in 1860. The large increase in the excise revenue is mainly due to enhanced duties accompanying a better administration and a more successful suppression of illicit manufacture and sale. Municipal and rural rates are the only taxes which are to some extent of a later origin than 1860. The total municipal taxation amounted in 1902-3 to about $3\frac{1}{2}$ crores, the whole of which is not of *post*-Mutiny origin. Municipal taxes or their equivalent existed in some places at an earlier date, and a portion of the present municipal taxation consists of items transferred from the Government account. Taking into account the reductions effected in 1905-6 and 1906-7, rural rates now amount to about $3\frac{1}{2}$ crores, and some portion of this was already paid in 1860 in the form of voluntary and other cesses.

Explanation of the large total revenue. Apart from the growth of the revenue, it may occasion surprise that the total (about £85,000,000 in 1904-5) should exceed half the amount of the Imperial receipts in so wealthy a country as the United Kingdom. But in making a comparison between India and England there are several circumstances of great importance to be taken into consideration. The population of British



LORD WILLIAM CAVENDISH BENTINCK.

India is more than five times that of the United Kingdom, and the Indian accounts include the figures of eight large Provinces, each of which is a kingdom in itself. The Government of India performs many functions outside those which generally fall to the state in England. In addition to governing the people, it holds in large parts of the country the position of a landlord; it is also a great proprietor of railways, irrigation works, and forests, and a manufacturer of salt and opium; it provides a large portion of the expenditure on national education and medical relief; and it undertakes many duties which in England are performed by private persons or bodies.

Furthermore, it must be remembered that, apart from the $3\frac{1}{2}$ crores of municipal rates, the Imperial accounts of India include, as stated above, practically the whole extent of taxation, while in the United Kingdom the local rates form a heavy addition to the general burden. But India could not have afforded her present scale of expenditure were it not that she is fortunate in deriving more than half her increase from sources other than taxation. The land revenue, the largest item of all, represents a charge on agricultural profits which would in Western countries be appropriated by private landlords, and the fact that in India it is paid to the Government does not alter its nature. A large but varying sum is derived from opium consumed in China; and the forests, the railways, the irrigation works, the post office, the telegraphs, and the mints all contribute their quota. The direct taxation of the Mughal Empire, raised as it was from a smaller population and cultivated area, and when the purchasing power of the rupee was considerably higher than it is now, was heavier than that now levied by the Indian Government.

Provincial settlements. The public accounts include the whole receipts and expenditure whether in India or in England. They are combined from three sets of accounts—the accounts of the Home Government, the accounts of the Supreme Government in India, and the accounts of the eight major Local Governments. The financial administration of the Local Governments is subject to the general supervision of the Supreme Government, and to conditions concerning the imposition of new taxation, the creation of appointments, the alteration of scales of salaries, the maintenance of great

lines of communications, and so on. The Local Governments are also required, ordinarily, to keep a prescribed minimum balance with which to meet emergent expenditure. In other respects they have a free hand in administering their share of the revenue. The arrangements with the Local Governments were formerly subject to revision once in five years. It has now been determined to assign to the Local Governments more permanent shares in the divisible revenues raised in their territories.

The Home charges. The Home receipts and expenditure of the Government of India are included in the general accounts under the appropriate heads. The net expenditure in England, chargeable on the revenues of the year, amounted in 1902-3 to about £17,700,000, distributed as follows: railway revenue account, £6,500,000, interest and management of debt (excluding interest charged in the railway account), £2,800,000; stores, £1,800,000; army effective charges, £1,300,000; civil administration, £400,000; marine, £200,000; and non-effective charges, consisting mainly of the furlough and pension allowances of civil and military officers, £4,700,000. These Home charges have sometimes been erroneously described as a tribute which India pays to England in consequence of her subordination to that country. A glance at the above figures will show that nearly 11 out of the total 17 $\frac{3}{4}$ million pounds consist of payments on account of capital and materials supplied by England, and belong to a commercial rather than an administrative class of transactions. Of the balance, 4 $\frac{1}{2}$ millions represent furlough and pension payments, and are a necessary concomitant of the British administration to which India owes her material prosperity. The Home expenditure is defrayed by the sale of Council bills (or telegraphic transfers) by the Secretary of State. Since the exports of India exceed her imports, European importers must remit to India the net value of this excess. For this purpose they buy bills on India, offered by the Secretary of State; the latter pays the Home charges with the proceeds, and the buyers send the bills to India, where they are cashed by the Indian Government.

General review. We may conclude with a bird's eye view of the period which has been taken to illustrate the progress and condition of the Indian finances. During this period (1876-1903) the total net revenue increased from about

39 to 61 crores, of which about $2\frac{3}{4}$ crores may be attributed to fresh taxation : namely, the income-tax and the addition to the Provincial rates by famine cesses which have now been repealed. A development of the commercial services—railways, irrigation, post office, and telegraphs—of enormous benefit to the country, has been accompanied by the conversion of a burden of 2 crores into a profit of 70 lakhs. The net charge on account of the funded and unfunded debt has been reduced from $4\frac{1}{2}$ to $1\frac{1}{2}$ crores. The net expenditure on the ordinary civil administration has risen from nearly 14 to 23 crores, the principal increase being under the heads of police, courts of justice, medical services, education, civil works, and pensions. The cost of the army (including military works) has risen from $16\frac{2}{3}$ to 26 crores. The total surplus of ordinary revenue over ordinary expenditure during this period amounts to about 91 crores. From this surplus 22 crores have been spent on major military operations, 4.5 crores on special defences, 26 crores on famine relief, and $16\frac{1}{2}$ crores on the construction of railways and major irrigation works.

In spite of the great loss caused by the fall in exchange the record is a satisfactory one, and few countries could show a better. Great difficulties and misfortunes have been encountered ; but, thanks to the growth of the natural wealth and to the remarkable recuperative powers of the country, these have been successfully overcome. The reality of material progress in India is sometimes questioned, and the terrible ravages of famine are said to be incompatible with it. A growing land revenue accompanied by a diminishing incidence on the cultivated area, and a steady rise in the receipts from salt, excise, customs, and income-tax, are in themselves no uncertain index of developing resources, and abundant testimony outside the Government accounts is not wanting. In 1876-7 the total value of the exports and imports of British India (excluding bullion) amounted to 61 and 37 crores respectively ; in 1902 the figures had risen to 129 and 86 crores. In 1878-9 there were 78 cotton and jute mills with a capital (so far as known) of $8\frac{3}{4}$ crores ; in 1902-3 the number of mills had increased to 237 and the capital to $24\frac{1}{2}$ crores. In 1878 one million tons of coal were produced in India ; in 1902, $7\frac{1}{2}$ millions. In 1891 the

petroleum sources yielded 6½ million gallons; in 1902, 56½ millions. In 1884-5 there were 694 joint stock companies in India with a paid-up capital of 20½ crores; in 1903-4, 1,489 companies owned a paid-up capital of 39½ crores.

The course of commercial and industrial progress never runs smooth; but in spite of periods of misfortune and depression there are abundant signs that India is advancing steadily, and it is not unreasonable to anticipate that she is entering on an era of material prosperity the like of which she has never known in the past. If such be the case, the Indian financiers of the future may achieve even greater results than their predecessors.

LESSON 40. LAND REVENUE

Development of the system: zamīndāri and ryotwāri.
As the several Provinces came under British control, their assessments were gradually reduced to order, the systems selected being at first tentatively adopted according to the varying circumstances of the different tracts and becoming more and more crystallized as time went on. The process was carried out with no little deliberation. A number of different systems were thus gradually evolved on lines which were for the most part mutually independent. The Supreme Government has, as a rule, wisely avoided the enforcement of unnecessary uniformity, so that the differences, both in principle and in method, among the various revenue systems in India are by no means inconsiderable. It is usual, however, to differentiate them roughly on broad lines according to the status of the person from whom the revenue is actually demanded. Where the revenue is imposed on an individual or community owning an estate, and occupying a position identical with, or analogous to, that of a landlord, the assessment is known as 'zamīndāri'; and where the revenue is imposed on individuals who are the actual occupants, or are accepted as representing the actual occupants of holdings, the assessment is known as 'ryotwāri'. The former of these systems prevails throughout Northern and Central India, that is to say in Bengal, the United Provinces, the Punjab, and the Central Provinces; and the latter in Bombay, Madras, Assam, and Burma. About 53 per cent. of the land revenue

assessment of British India is zamīndāri and 47 per cent. ryotwāri. In the Native States the assessments generally partake of the character of those prevalent in the adjoining portions of British territory.

Three main branches of the subject. It will be found convenient to note the general features of the Indian land revenue administration, whether zamīndāri or ryotwāri, under three heads which represent the processes actually followed: namely, (1) the preparation of the cadastral record, (2) the assessment of the revenue, and (3) the collection of the revenue so assessed. The first two processes are known collectively in most Provinces of India as the 'Settlement' of the land revenue, and the officer who carries them out is known as the 'Settlement Officer'. The duties of the assessing staff entail a minute local inspection from village to village through large tracts of country, and there are few officers of Government who are thrown more into contact with the people than the Settlement Officers, or have greater opportunities for understanding their wants and feelings.

(1) *The cadastral record.* An essential preliminary to the assessment of land in India, as in other civilized countries, is the preparation of a cadastral map. It is true that in Bengal, where the revenue was permanently assessed in 1793, the present assessment rests on information obtained without the aid of a survey; but this defect has given rise to inconveniences both fiscal and administrative, and it was found necessary in 1892 to introduce a cadastral survey and record in the Bihār Districts of that Province in order to regulate the relations of landlord and tenant. In Provinces outside Bengal the existing assessments are based almost without exception on a field to field survey. The cadastral map having been completed, a field register is usually prepared to correspond with it, and from this field register is prepared the ledger of holdings. This record is primarily a fiscal record, the object of which is to show from whom the assessment of each holding or field or number is to be realized and the amount to be realized in each case. And further, in the greater part of British India the cadastral record forms a valuable compendium of the existing titles in, and encumbrances on, each parcel of the soil; and in most of the Provinces where it is prepared in the form of a record of rights, this record is given

by law a presumptive force, being held to be correct until the contrary is proved. Arrangements have been made under which the records are now in most Provinces revised either annually or at short intervals in such a way as to maintain intact and up to date the accuracy of the initial record.

(2) *The assessment.* It being premised that the revenue, whether fixed or otherwise, is levied by means of a cash demand on each unit assessed, the next step is to note the considerations affecting the incidence of the cash demand thus imposed. Under native rule the assessments were usually represented either directly or indirectly as a certain fraction of the *gross* produce. What the fraction was and on what system it was based, it is impossible in any general way to record. The ancient textbook known as the Laws of Manu allows the king to take in kind one-twelfth to one-eighth, or if necessary one-fourth. The cash assessments of Akbar, according to the contemporary *Ain-i-Akbari*, represented a third and, according to later authorities, a quarter of the produce. The Hindu Rājās in the greater part of Madras, according to Sir Thomas Munro, took shares varying from two- to three-fifths, and the Marāthā rulers in Western India are said to have exacted not less than one-half. Calculations made by the Famine Commission of 1900-1 show that in the Central Provinces the incidence of the present land revenue is less than 4 per cent. of the average value of gross produce; that in Berār it is about 7 per cent., in the Deccan something over 7 per cent., and in Gujarāt 20 per cent. Even allowing for a margin of error in these figures, it is therefore clear that the Indian Government now takes a very much lower share of the gross produce than was customary in pre-British days.

Share of the net produce. Economists have long ago recognized the injustice (in other than backward tracts) of land revenue assessments fixed at a uniform fraction of the gross produce, and the assessment of the revenue on this principle is now practically as obsolete in British India as in most of the civilized states of Europe. Except in Bombay, where the assessment is not fixed in terms of the produce at all, the revenue throughout India is assessed so as to represent a share not of the *gross*, but of the *net* produce. The meaning of the term 'net produce' or 'net assets' varies in different

parts of India. In Northern India and in the Central Provinces it represents the rent, when rent is paid, or that portion of the gross produce which would, if the land were rented, be taken by the landlord. In Madras and Lower Burma, on the other hand, the net produce is the difference between the assumed value of the gross produce and a very liberal estimate of the cost incurred in raising and disposing of the crop. But the principle throughout is that the revenue should be based on facts or calculations representing not the *gross* but the *net* production of the land to the payer, and it is in the correct ascertainment of this net production that the crucial feature of the assessment from a statistical point of view consists.

Permanent and temporary settlements. In determining the land revenue the Government is accustomed to announce that the amounts or rates imposed will not be altered till the expiry of a certain specified period. About five-sixths of the present Province of Bengal, one-eighth of Assam, one-tenth of the United Provinces, and a quarter of Madras, representing in all about one-fifth of the area of British India, are permanently settled. The land revenue throughout this area has now, like the English land tax, none of the characteristics of taxation, and may be said to be at the present day nothing more than a rent-charge, the burden of which has long ago been discounted by the reduced selling price of the land which it affects. In the rest of British India the commonest term of settlement at the present day is one of thirty years—a period first introduced in Bombay in 1838, and thence extended to Madras and the Agra Province, where it has been the standard period for the last half-century. The general question of the term of settlement was examined in 1895, when it was decided that thirty years should continue to be the ordinary term in Madras, Bombay, and the United Provinces; that in the Central Provinces twenty years should be the general rule; and that in the Punjab also twenty years should be the usual term, thirty years being admitted in some cases. In backward tracts, such as Burma and Assam, and in exceptional circumstances, such as exist in Sind, shorter terms are permitted. The assessments of India are thus divided into two main classes according to the period for which they run: namely, permanent and temporary. Of the total land revenue



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of India in 1900-1 about 16 per cent. belongs to the former and 84 per cent. to the latter category.

Characteristics of Indian land revenue. Minds accustomed only to European systems are apt to start with a prejudice against a form of revenue which may absorb half the rent, and to advocate its immediate conversion into taxation of the standard type. A reference, however, to the chapter on Indian rents will show that historically the existence of the land revenue is anterior, and not subsequent, to that of private rents; that it finds its origin and present basis in the immemorial right of the Crown in India to a share of the produce of all land within the state; and that rent, and rent-yielding property in land, owe their existence to the policy, adopted during the last hundred years, of gradually reducing the incidence of the revenue; so that, as a matter of history, the right of the state to the rent is superior to that of the private landholder. Moreover, in view of the fact that a land revenue of the Indian type is practically unknown to European readers, it is advisable to note that in comparison with most known forms of taxation it has merits which should not be overlooked. It is, for instance, the only considerable class of state revenue which (obtained as it is from profits on the staple industry of the country) can be raised without enhancing prices or diminishing general consumption. It approximates more than most forms of taxation to the 'single tax' which has, rightly or wrongly, been advocated by some theorists as the ideal type of assessment, and effects, in a measure, that 'nationalization of the land' which is not without strenuous supporters. It falls on that part of the produce which goes (or which under ordinary circumstances would go) not to the cultivator, but to the intermediary rent receiver. Even in respect of the latter, it is when permanently fixed a charge the burden of which has long been discounted, and when not fixed in perpetuity it approximates to a charge of this nature in so far as it is fixed for long terms.

It is scarcely to be imagined, therefore, that a form of revenue which has been from time immemorial known and accepted by the people in India should be exchanged in any wholesale manner for other sources of taxation which would as a rule involve more unpopular and inquisitorial methods. That the proportion of the land revenue to the total income of

the state is, however, gradually diminishing with the general development of the country will be evident from the following figures :—

Proportion borne by the land revenue to :—	1870-1. p. c.	1880-1. p. c.	1890-1. p. c.	1900-1. p. c.
The gross income of the state .	39.0	29.5	28.0	23.2
The taxation proper . . .	43.9	41.6	40.8	38.6

(3) *The collection of the land revenue.* Owing partly to the general lack of capital among the agricultural population, the land revenue is seldom recovered by a single annual payment. The usual custom is for a portion to be paid after each harvest, the dates and amounts being fixed to meet the local circumstances of each tract. The dates are usually fixed so that each revenue-payer should have time to realize his produce or his rent before he is called upon to pay the revenue, and yet should be required to pay the revenue as soon as possible after the rent or produce has been realized. For the recovery of sums not paid by due date the Government has extensive powers conferred by law.

Suspension and remission of revenue. In areas which are under a fixed assessment it has been customary of late years in most Provinces to grant with greater freedom, as necessity arises, a postponement of the whole or part of the demand on a harvest, and even, in cases where ultimate recovery would entail real hardship, to allow an absolute remission of the demand. In the years 1899-1900 and 1900-1 the collection of Rs. 2,06,37,000 of revenue was suspended in the Districts affected by famine, and at the conclusion of the famine in 1902 no less than Rs. 1,98,23,000 was entirely remitted.

Incidence of the present land revenue. In India, as a whole, the land revenue in 1900-1 came to Rs. 1-3-7 per head of the population, and the incidence in the fully assessed lands was for the total area R. 0-12-9 per acre, and for the cultivated area Rs. 1-7-8 per acre.

LESSON 41. MISCELLANEOUS REVENUE

Sources of opium supply. The principal sources of opium supply are, firstly, Bihār and the Districts of the United Provinces lying along and in the north of the Gangetic valley; and, secondly, a number of Native States in the

Central India and Rājputāna Agencies, principally Indore, Gwalior, Bhopāl, and Mewār. There is also some production in Baroda. The produce of the first region is known as Bengal, and of the second region as Mālwa, opium.

Bengal opium. The right to produce Bengal opium was farmed by the Muhammadan rulers who preceded us, and this method was adopted by Warren Hastings, on behalf of the East India Company, in 1773. It was, however, found to give rise to deterioration of the product and to oppression of the cultivators by the contractors; and accordingly in 1797 the Bengal Government assumed the direct monopoly of manufacture, a system which has continued to the present time.

Mālwa opium. As early as the beginning of the sixteenth century a native trade in opium existed between the west coast of India and the Far East, and for a time a large share of it fell into the hands of the Portuguese. The efforts of the East India Company were at first directed to the restriction or suppression of this trade, which interfered with the Bengal monopoly. This proved impossible, and in 1830 the Government of India authorized the export of Mālwa opium subject to the payment of duty.

Consumption of opium. Opium is consumed in all Provinces of India. The consumption is highest in Assam, where it amounts to 8·8 seers per thousand of the population. In Bombay the corresponding figure is 2·4 seers, in the United Provinces and Bengal 1·3 seers, and in Madras 1·1 seers. The drug is commonly taken in the form of pills; but in some places, chiefly on social and ceremonial occasions, it is drunk dissolved in water. An infusion of poppy heads called *post* is commonly used in parts of Northern India. Opium-smoking is not extensively practised in India proper, where it is considered a disreputable habit. Opium is largely used for medicinal purposes, and is a common household drug of the people.

So far from having encouraged the production of opium in India, as is often alleged, the British authorities found it produced wherever this could profitably be done; and their whole policy has been to restrict the production to authorized areas, while they have procured from many Native States, and notably from Hyderābād and Mysore, the discontinuance of internal opium production. The Opium Commission of 1893

were of opinion that the evil effects ascribed to the drug have been much exaggerated. They summarized the preponderant medical evidence in saying that 'the temperate use of opium in India should be viewed in the same light as the temperate use of alcohol in England. Opium is harmful, harmless, or even beneficial, according to the measure and discretion with which it is used'. They did not advise prohibition; they recommended the maintenance of the Bengal monopoly system of production; and they found that the arrangements for retail vend were in general sufficiently restrictive. With some small exceptions, the cultivation of the poppy is forbidden in British India outside the area of the Bengal monopoly.

In Burma the consumption of opium, which there usually takes the form of smoking, is not commonly practised by Burmans; they appear to be specially susceptible to injury from it, and they view it in general with disfavour. The consumption is permitted only to non-Burmans, and to a limited number of Burmans specially registered as opium consumers in Lower Burma.

The salt tax. All salt consumed in British India is subject to duty. Objection has sometimes been taken to the principle of taxing a prime necessary of life such as salt. The existing tax is, however, a light substitute for the transit and internal customs duties which were levied on various necessities of life, salt included, until the later days of the East India Company; the mass of the people could not be taxed readily in any other way; and it is both right and expedient that they should bear some part of the cost of administration.

Sources of salt supply. The total supply of salt in India amounted in 1902-3 to 40 million maunds, of which nearly 70 per cent. was produced in the country and the rest imported by sea. The principal sources of Indian production are the Salt Range and Kohāt mines in the Punjab and the Frontier Province; the Sāmbhar Lake and other salt sources worked by the Government of India in Rājputāna; the salt-soil brine on the borders of the Lesser Rann of Cutch; and the sea-salt factories on the Madras and Bombay coasts and at the mouth of the Indus. Bengal and the greater part of Burma obtain their salt by importation. Nearly half the salt imported into Bengal comes from Liverpool, and the rest principally from Germany, Aden, Maskat, Jedda, Bombay, and Madras.

Excise. The Excise revenue in British India is derived from the manufacture and sale of intoxicating liquors, hemp drugs, and opium, all of them commodities whose use must, in the interests of the people, be restrained within reasonable limits. There is no excise on tobacco, which is largely grown and consumed, nor on betel (*pān-supārī*), which is used everywhere by all classes of the population. The expediency of imposing a tax on Indian tobacco has been considered on more than one occasion; but the idea has been abandoned, partly because it would be difficult to maintain an efficient excise supervision over the widely scattered cultivation of the plant, but chiefly because the duty would fall mainly on the classes who are most affected already by the salt tax. The revenue under each head of excise has risen steadily with the increasing prosperity of the lower classes, and the improvement of the excise administration.

Intoxicating liquors. On the subject of excise before the days of British rule our information is scanty. But there is abundant evidence to show that excise (under the name of *ābhārī*) was a common source of revenue to the Muhammadan rulers of India, though their system was of a very rough description. The limitations imposed on the manufacture and sale of liquor, when occasional and limited attempts at total prohibition in a few places had proved unsuccessful, were devised with the sole object of raising revenue and without any design of regulating or controlling consumption. The system in general force was one of farming, the right of manufacture and sale being given to the highest bidder.

The British administration inherited this farming system, but soon began to modify it. The general policy has been so to adjust rates and methods as to check the practice of excessive drinking, and at the same time to safeguard the revenue, without encouraging illicit manufacture and traffic by enforcing unduly harsh rules. In other words, the aim has been to secure the maximum of revenue with the minimum of consumption. Whereas in the United Kingdom the proportion of liquor shops in 1901 was 1 to about 240 of the population, the proportion in India was only 1 to 2,400.

Hemp drugs. The narcotic products of the hemp plant consumed in India fall under three main categories, which may, generally speaking, be defined as follows: *Ganja* consists

of the dried flowering tops of the cultivated female hemp plant which have become coated with resin in consequence of being unable to set flowers freely ; *charas* is the name applied to the resinous matter which forms the active principle when collected separately ; *bhāng* is the name given to the dried leaves of the hemp plant, whether male or female, cultivated or uncultivated. The plant grows wild in many parts of India, especially in the sub-montane tracts of the Himālayas.

The main features of the existing excise arrangements are restricted cultivation under supervision, storage in bonded dépôts, payment of a quantitative duty before issue, retail sale under licence, and restriction on private possession. No attempt is made to extirpate the spontaneous growth of the hemp plant, and no restriction is placed on the use of the wild plants in the green state or on their cultivation for the manufacture of fibre. Endeavour is made to control the use of *bhāng* by prohibition or taxation of cultivation, collection under licence, and transport regulations. The production and consumption of hemp drugs in Burma (except for medicinal purposes) are altogether prohibited, in order to prevent the habit from arising in a Province where it does not at present exist. *Ganja* forms the principal source of hemp drugs revenue in Bengal, Assam, the Central Provinces, Madras, and Bombay, while the consumption of *charas* is mainly confined to Northern India. *Bhāng* is consumed in almost all Provinces. *Charas* is mainly derived from Central Asia.

Customs. The general customs duty is 5 per cent. *ad valorem* on commodities imported into British India by sea. This tax is levied for fiscal purposes, not for the protection of native industries. In certain cases the general tax is superseded by special duties levied for particular reasons. For administrative purposes a tax is imposed on the import of arms and ammunition ; the import duties on liquors need no explanation ; the import of opium is taxed at a rate which is, and is meant to be, prohibitive ; an import duty on salt forms part of the general system of administering the salt tax. Rice is practically the only commodity on which an export duty is levied. The net customs revenue amounted in 1904-5 to more than 6 crores, the proceeds of the import duties being nearly four

times as great as those of the export tax. Cotton twist and yarn of all kinds were exempted from customs and excise duty in February, 1896, and a duty at the rate of $3\frac{1}{2}$ per cent. was imposed on woven cotton goods of all counts, whether imported or manufactured in Indian mills. There has been a satisfactory growth of both manufacture and trade, notwithstanding that the former has been hampered by the continued prevalence of plague in Bombay, the chief seat of the industry. The most important exemptions from the general duty are food-grains, machinery, railway material, and coal; while most classes of iron and steel are taxed at the low rate of 1 per cent.

Direct taxation. The income-tax was introduced in 1886, and yielded in 1902-3 a net revenue of 207 lakhs, reduced to 186 lakhs in 1904-5 by the exemption of small incomes. Direct taxation was well known to the native governments which formerly ruled in India. The imposts varied in name and conditions, but depended in general on an intimate acquaintance with the circumstances of the non-agricultural families who paid the tax. These direct taxes were, as a rule, relinquished by the British administration, with a host of miscellaneous octroi and transit duties, at the time when the salt tax was raised (1843).

Income tax in the United Kingdom and in India. The difference between the commercial wealth of the United Kingdom and of India is forcibly brought out by the fact that in the former country every 1*d.* per £ of income tax produces about £2½ millions, while the gross collections of what is practically a 6*d.* income tax in India yielded, before the recent remission of taxation, only about £1,400,000. It must be remembered, of course, that the assets of India are mainly agricultural, and that agricultural profits are exempt from the tax.

Provincial rates. Provincial rates, which exclude municipal taxes, are levied chiefly for the construction and repair of roads, the up-keep of schools and dispensaries, village sanitation, and other local expenditure. They are generally assessed on the annual 'assets', or rent value of land. In 1904-5 the net receipts amounted to 418 lakhs, of which nearly half was administered by local boards. At the present time a general cess on the annual value of land is levied throughout British India for local purposes at a rate which is in general equal, or

nearly equal, to one anna in the rupee. Apart from the land cess imposed for purposes of local self-government are the rates levied, outside permanently settled estates, for the remuneration of the village watchman and headman. The support of this village staff has been a charge on the community from time immemorial.

LESSON 42

LOCAL AND MUNICIPAL GOVERNMENT

Town government in ancient India. While the Hindus had for many ages a system of village self-government, neither they nor their Muhammadan conquerors succeeded in evolving a local administration such as that which grew up in Europe. Neither the customary rule of the Indian village communities nor the regulations of the industrial castes, which in some respects resemble our mediaeval trade guilds, ever grew into a true municipal system; and the accounts which have reached us of the method of town government in Hindu and Muhammadan times show the authority vested not in a representative body of inhabitants, but in the police officers, tax-gatherers, and other officials of the sovereign.

Development of municipal institutions. The system of municipal administration as it now exists in British India is, therefore, an exotic institution, and for the most part of comparatively recent introduction. It had a much earlier origin in the Presidency towns than in the interior of the country; outside these towns there was practically no attempt at municipal legislation before 1842. In that year an Act was passed, applicable only to Bengal, to enable 'the inhabitants of any place of public resort or residence to make better provision for purposes connected with public health and convenience'. The next attempt at municipal legislation for country towns was made in 1850 by an Act which applied to the whole of British India. The Resolution of Lord Mayo's Government which introduced, in 1870, the system of Provincial finance contained these words:—'Local interest, supervision, and care are necessary to success in the management of funds devoted to education, sanitation, medical, charity, and local public works.' In 1881-2 the Government of Lord Ripon issued orders which had the effect of greatly extending

the principle of local self-government. That statesman took a keen interest in the system as a means of political and popular education, and under his influence the inhabitants of both town and country were given a more real and important share in the management of local affairs than they had hitherto possessed. Acts were passed in 1883-4 which greatly altered the constitution, powers, and functions of local bodies. The principles laid down by Lord Ripon's Government govern the administration of municipalities to the present day. In some Provinces the Acts of 1884, amended in certain respects, are still in force, in others they have been superseded by more recent enactments; but neither the amendments nor the new Acts have substantially altered the system. The Bombay District Municipalities Act of 1901 is a model of modern municipal methods adapted to the conditions of Indian life.

Municipal functions. Municipal functions are classified under the heads of public safety, health, convenience, and instruction. Within these heads the duties are many and varied. The Bombay Act of 1901 gives a detailed statement of the functions of an Indian municipality, discriminating between obligatory and discretionary duties. The following are included in the obligatory list: lighting, watering and cleansing public streets and places; abatement of public nuisances; protection against fire; regulation or abatement of offensive or dangerous trades and practices; removal of obstructions in public streets and places; securing or removing dangerous buildings; reclamation of unhealthy localities; disposal of the dead; construction and maintenance of public streets, culverts, boundary marks, markets, slaughter-houses, latrines, drains, sewers, drainage and sewage works, baths, washing places, drinking fountains, tanks, wells, dams, and the like; water-supply; naming streets and numbering houses; public vaccination and the supply of animal lymph; public hospitals and dispensaries; primary education; measures of precaution and relief during visitations of epidemic disease, and of relief during periods of famine or scarcity.

This long list represents the work of a large and flourishing municipality; in smaller places only a portion of the duties would be fulfilled. The discretionary objects of expenditure include new streets; public parks, gardens,



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libraries, museums, halls, offices, rest-houses, and other public buildings; education above the primary stage; roadside and other trees; census; rewards in connexion with vital statistics; survey; precautionary measures connected with dogs; places for carrying on offensive trades; sewage arrangements for private premises; sewage farms or factories; public receptions; ceremonies and exhibitions.

Local boards. The development of local institutions in rural areas began later, and has been slower, than the growth of municipal government. In Madras and Bombay semi-voluntary funds for local improvements were the first germ of modern local self-government. The primary duty of the local boards in British India is the maintenance and improvement of the means of local communication. Their obligations do not, in general, extend to the main lines of traffic, but in some instances they have taken over these also, and have even gone so far as to promote light railways. Other important functions are the maintenance of hospitals and dispensaries; the provision of drainage and water-supply; general sanitation; vaccination; education, especially in its elementary stages; the charge of pounds and ferries; the construction and maintenance of markets, rest-houses, and other public works; and the relief of the population in times of famine.

Port Trusts. One form of local self-government which may be briefly mentioned here is the existence of Port and Harbour Trusts in Calcutta, Bombay, Karāchi, Madras, Rangoon, Chittagong, and Aden. These bodies, which administer the ports in question, and are charged with the provision of suitable dock-accommodation and other necessary services to shipping, are all under chairmen appointed by Government; but a large proportion of their members represent the commercial communities interested in the port who are, except in Aden, elected by Chambers of Commerce or similar bodies. Among the most important works carried out by Port Trusts in recent years may be mentioned the opening of the Kidderpore docks in Calcutta (1892), the Merewether dry dock in Bombay (1891), and a dry dock in Karāchi (1901). The construction of a new dock in Bombay, to suit the increased size of modern steamships, has recently been begun.

LESSON 43. PUBLIC WORKS ORGANIZATION

Early administration: (1) *Buildings and Roads.* Public Works in India fall naturally into three classes, Buildings and Roads, Irrigation, and Railways. Military, as distinct from Civil, buildings make a fourth class, when separately administered as they are now. The organization of the three main branches originated separately and at different times. A Military Board in each of the three Presidencies was the first recognized authority for works of the first class, which in those days were all of a military character, comprising barracks and other buildings for troops and the few military roads that had been commenced prior to 1850. The idea of dissociating the Public Works business from the Military Board of the Bengal Presidency, which eventually led to the extinction of all three Military Boards, was probably aided by the success that attended the experiment of creating a department for Public Works in the newly acquired Province of the Punjab. This was in 1849, and the first Chief Engineer of the new department was Lieutenant-Colonel Napier, afterwards Lord Napier of Magdala.

(2) *Irrigation.* Irrigation works, the second of the three classes, had been carried out, under British rule, many years before the above date. Work on the systems known as the Eastern and Western Jumna Canals, which owed their first beginnings to neglected canals constructed by Firoz Tughlak and the Mughal emperors, appears to have been commenced between 1817 and 1822. The Ganges Canal had been commenced in 1842 under Sir Proby Cautley; the Bāri Doāb Canal also had been commenced by Colonel Dyas. In Madras the great anicut (dam) across the river Godāvāri had been designed and constructed by Sir Arthur Cotton and his successors. When the new Public Works Department was formed in the Punjab in 1849, and in the United Provinces five years later, an Irrigation branch, under a Director of Canals, was already in existence in both cases; and to this day the Irrigation and Buildings, &c., branches are more distinct in these Provinces than elsewhere.

(3) *Railways.* Railway construction had begun with a contract, in 1849, with the East Indian Railway Company,

for an experimental line to cost not more than one million sterling. This line was to be so selected as to form, if so desired, a portion of the future trunk line to the United Provinces. In the spring of 1853 the Government of India laid before the Court of Directors a programme of railways for the Indian empire. A system of trunk lines was recommended, connecting the interior of each Presidency with its principal port, and the several Presidencies with each other. The lines proposed were: (1) from Calcutta to Lahore; (2) from Agra or some similar point to Bombay, or alternatively a line from Bombay by the Narbadā valley, to meet, at some point, the line from Calcutta to Lahore; (3) from Bombay to Madras; (4) from Madras to the Malabar coast. This general plan was accepted by the Court of Directors, and by the beginning of 1856 some progress had been made in constructing most of the lines.

Separation of military from civil works. The process, begun during the period 1863-72, of separating military from civil works made rapid progress in the ensuing ten years; and in 1882 this separation was emphasized by the whole of the business in connexion with the Bengal army being handed over to the Military Department, together with the Military Works branch of the Public Works Secretariat. Thus the Public Works Department, which, as the successor of the Military Board, was in its inception purely military, has become a purely civil organization, dealing with only a few military cantonments in outlying localities too small to constitute a military unit.

Engineering Colleges. There are four Engineering Colleges in India—at Roorkee in the United Provinces, Sibpur (Calcutta), Madras, and Poona; also Engineering Schools at Rangoon, in Bihār, and elsewhere. Of these the oldest and most important is the Thomason College at Roorkee, which was founded in 1848 by the Lieutenant-Governor of the North-Western Provinces whose name it bears. It was first established as a training school for supplying subordinates for the Ganges Canal; and a few years later it was enlarged and converted into a college, with the object of training civilian engineers for the newly constituted Department of Public Works, and for the instruction of regimental officers in engineering. In 1902 it had a strength of about 320

students, of whom about 125 of various classes pass out annually. The greater number of these find employment with Native States, Railway Companies, local boards and municipalities, and in private industrial concerns, while others enter the Public Works Department and also the Survey of India.

Services outside the Department. Officers of the Public Works Department, both of the superior and subordinate services, are freely lent to Railway Companies, to District and municipal boards, to Native States, and in recent years, to British Colonies and Protectorates, both for ordinary employ and for the carrying out of special projects. Several officers who originally belonged to the Department, among whom Sir W. E. Garstin and Sir W. Willecocks (both pupils of Roorkee) may be specially mentioned, have had a distinguished career in Egypt.

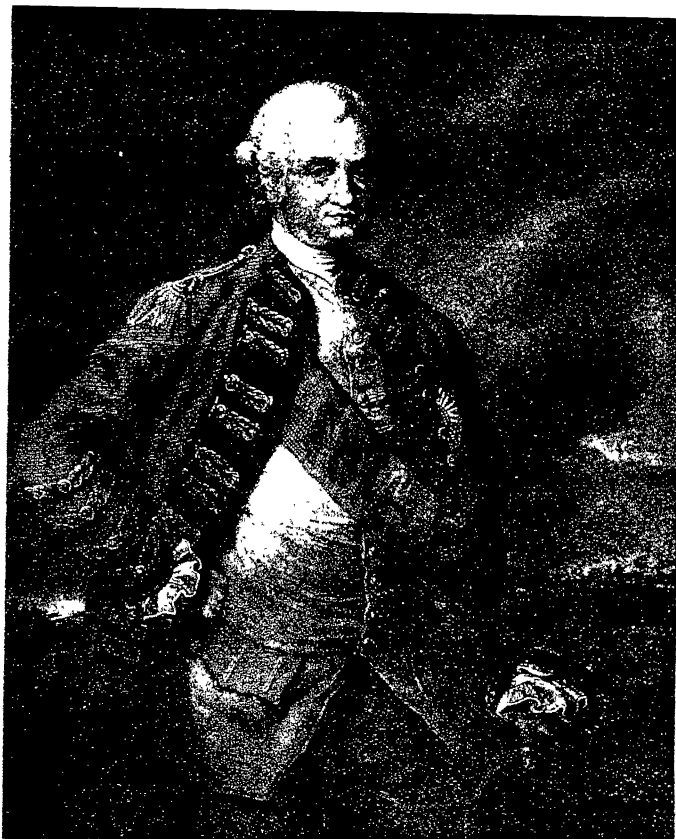
LESSON 44. ARMY

First beginnings. The Indian army sprang from very small beginnings. Guards were enrolled for the protection of the factories or trading posts which were established by the East India Company at Surat, Masulipatam, Armagon, Madras, Hooghly, and Balasore in the first half of the seventeenth century. These guards were at first intended to add to the dignity of the chief officials as much as for a defensive purpose, and were not really soldiers, but as time went on their military character became slightly more marked. The original 'ensign and thirty men' of Bengal received a reinforcement in the shape of 'the gunner and his crew'; the small force sent out, in 1662, to hold the island of Bombay for Charles II became the nucleus of the military forces of Bombay; and the 'peons' of the Madras factories were formed into bodies which had some sort of military organization. But the origin of the regular native army of India may be more accurately traced to the enrolment of sepoy, in Madras, in 1748, under Major Stringer Laurence, 'father of the Indian army.' War had broken out in 1744 between Great Britain and France, and the capture of Madras by the latter power in 1746 obliged the Company to commence the formation of a military establishment. It is, indeed, hardly

too much to say that we owe our native army to France. The successes of the French led Robert Clive to follow their example, and to give to the native soldiery a discipline they had never before experienced.

Clive's reforms. Before the battle of Plassey (1757) Clive had set to work to improve the native troops. The peons and watchmen, armed and equipped in the native style with swords and targets, bows and arrows, lances and matchlocks, had disappeared. India was swarming with military adventurers, and Rohillas and Rājputs were found ready to enlist in the British service. This material was shaped by Clive into a battalion of sepoys, drilled, disciplined, and clothed on a European model; his first successes soon caused its augmentation; and immediately after Plassey a second battalion was raised. In Madras six battalions were organized in 1759; while in Bombay the congeries of Arabs, Abyssinians, Indian Muhammadans, and Hindus, constituted as an auxiliary to the European battalions, were formed into independent native companies in 1760, and into battalions in 1767. From independent companies commanded by native captains, to battalions with native commandants, supervised by one or two British officers, the organization was successively developed into one with European commandants of battalions and a subaltern to each company.

Native armies of the period. The native armies of those days were of huge dimensions, dragging in their train ten times the number of the fighting men in the shape of followers, and constituting a series of moving bazars. As a rule these armies had no cohesion. They were merely great bands of men following the standards of their chiefs. In the Mughal armies, for example, the emperor was supposed to have at his disposal fifteen or sixteen Rājās, each of whom could bring 25,000 horsemen into the field. Thousands of free-lances were employed, and roving adventurers were ready to bid for any service which offered some pay and more plunder. Corruption and disloyalty, intrigue and indulgence, were rampant in such forces. As time went on the native princes endeavoured to imitate our system of training; but the best characteristics were wanting, while the want of equipment and material and the slackness of discipline operated against the attempt. Led by really good soldiers in their own way, these enormous



CLIVE.

bodies of horsemen and footsoldiers were foemen who might succeed by sheer numbers ; but directly they half-copied their adversaries they became easier to overcome, because they had neither the training, the European officers, the equipment, nor the tactical skill to cope with the smaller forces of the British, animated by a common spirit and commanded by resolute men.

The Marāthās. The Marāthās did not generally favour the regularization of their troops. They had their own military system, which was one of great mobility based on secure fortresses in their own mountainous country. Constant war had turned a race of husbandmen inhabiting a hilly region into predatory soldiers. But the Marāthās were not soldiers by reason of inherited qualities. The times produced their armies, and the genius of a great captain (Sivaji) fostered them ; but when they were finally overthrown the Marāthā spearmen passed back into the ranks of the husbandmen from which they had emerged, and it is now no easy task to draw from this race even the limited number of soldiers that we require.

The Sikhs. Another military power, the Sikhs, arose in the far North to trouble the Mubammadan rulers of India, and eventually the British. The Khālsa army became a most formidable instrument of war, and only terminated its splendid career after fighting six pitched battles with the British. The admirable qualities of the soldiers of this army were innate. In the early days of their history the Sikh horsemen were renowned, but, in the course of time, the Sikh matchlock-men replaced them to some extent and became equally known for their stanchness and fire-power. Ventura and Allard, Court and Avitabile, did something towards the training of the troops, but the material and the martial ability were there already. At Gujrāt (1849), 'the battle of the guns,' the Sikh power was finally overthrown and the glorious history of the Khālsa army closed. Many of the soldiers gave up the pursuit of arms to follow the plough again, while numbers took service with us ; and they and their descendants have proved to be the finest and most loyal soldiers of the native army, second to none in the whole empire for constancy, fidelity, and military prowess.

The Mutiny of 1857. In 1857 nearly the whole of the Bengal army, regular and irregular, revolted. The Punjab

Frontier Force not only stood firm, but proved itself of the utmost value in the suppression of the Mutiny. The Hyderābād Contingent, and the Madras and Bombay armies with few exceptions, remained steadfast; but there was well-founded anxiety at the time, and it is fair to believe that cordial dislike of the Bengal army had a good deal to do with the loyalty of the other forces. This tremendous explosion of military rebellion cannot be traced to any one particular cause. The sepoy army had built up the fabric of the British empire in India; the races we had conquered enlisted freely under our colours in voluntary service, attracted by regular pay, fair treatment, and much active employment. They trusted their British officers, and could rely on their British comrades in the hour of need, and to bear the brunt of the fighting. We were justified in regarding with some complacency this marvellous army of mercenaries. But as the years went on we forgot how slight were the bonds which united this great mass of Asiatic soldiers to their conquerors; such warnings as we had, passed by unheeded; and we ignored the effect of the measures political, domestic, and military, which were carried out to satisfy the craving for improvement according to Western ideals.

An uncaste and centralized military system; a large army of high-caste men drawn from one part of the country, confident in its own strength, and acted on by religious fears, with other less direct causes, constituted a highly inflammable material which thousands of secret agents were conspiring to ignite. They were helped in a remarkable way by our own action. The old musket was to be replaced by the Enfield rifle, and dépôts of instruction were formed. Cartridges were made 'agreeably to instructions from home'; and not only had the cartridge paper itself, which was sent out from home, a glossy or greasy appearance, but the end of the cartridge containing the bullet was greased. The previous lubricating compound was composed of coco-nut oil and bees-wax. The new stuff was concocted of one part of bees-wax and six parts of tallow; and there was 'no official knowledge' of what the components as supplied by the contractor consisted, or from what animal's fat the tallow was made. At all events the sepoys thought that the grease used was a mixture of the fat of pigs and cows, the animals most abhorrent and sacred to

Musalmāns and Hindus respectively. It was in vain that the suggestion of the men that only wax and oil should be used was adopted; that they were allowed to prepare their own mixture; and that steps were taken to disabuse their minds of any sinister intention against their religion. The mischief had been done, the native officers were afraid of their men, and emissaries to every regiment in the army spread disaffection successfully among an excited and credulous soldiery. Even then, had there been a strong Government and a sufficient European force, the Mutiny might have been confined within narrow limits. As it was, the Bengal army dissolved itself; a remnant only remained faithful; and when, after two years of fighting, peace and order were restored, a new army had to be organized from the faithful few and from the corps and levies which had been hastily raised.

Service outside India. The Indian army has played a considerable part in Imperial policy, from early days down to the most recent dates. Its soldiers have crossed the seas to fight for Britain; they have cheerfully endured hardship in remote lands where everything has been strange and unhallowed to them; and in the late campaigns in China and South Africa India has shown how much she contributes to the military strength of the empire.

Conclusion. The lessons we may learn from the history of the army in India are clear enough. For the external defence of India, and to be able to render assistance to the empire at large, the Indian army must be prepared at all points, ready to act, and organized for expansion. For the internal security of India, the greatest weight must be given to the composition of the native army, to the avoidance of homogeneity, the employment of the European population as an auxiliary force, and perfect readiness to maintain order. During the first twenty years after the Mutiny the labours of administrators were directed to the reconstruction of a large portion of the native army and to the reorganization of the whole, and economy was more regarded than perfect efficiency. In the period that has followed great progress has been made in administration, organization, mobilization, and defence. India has entered on a new phase of connexion with Imperial politics; and successive administrations from Lord Lytton to Lord Curzon have carried out a continuous policy of preparation and defence,

enunciated by the distinguished men who have filled the posts of Commander-in-Chief and Military Member of Council.

The Royal Indian Marine. The East India Company necessarily began its existence as a maritime body, and its ships soon became vessels of war as well as of trade. The armed naval force of the Company was created by the charters of Charles II and James II, but it was not till 1829 that the Bombay fleet was united with that of Calcutta and became the Indian Navy. The Indian naval force performed its duties with great efficiency and distinction. It fought with the Portuguese, the Dutch, and the French, and with pirates and slave-holders in every Eastern sea.

The Indian Navy was abolished in 1862, for reasons of economy, and because it was thought that the naval defence of India should be entrusted to the Royal Navy. The 'Bombay Marine' was then created, and was eventually amalgamated with the 'Bengal Marine' in 1877 under the title of 'Her Majesty's Indian Marine', changed in 1892 to 'Royal Indian Marine'. The Indian Marine has developed in the course of years into a highly efficient force, which has done admirable service in numerous expeditions over-seas and in scientific surveys.

LESSON 45. POLICE AND JAILS

The indigenous police system. The most interesting feature of the modern Indian Police system is that, along with a regular police formed on the model of the Royal Irish Constabulary, it comprises as an essential part of its organization the ancient institution of the village watch. It is now generally admitted that the village community in its most complete form is of non-Aryan origin; and it is in the parts of India which have least felt Aryan influence, that is, in the country lying to the south of the Vindhya mountains, that this form of self-government has retained the greatest vitality. In many tracts within this area the old complement of village officials still exists and every village has retained a headman and a watchman. These officers have been from ancient times, and are still, though to a somewhat less degree, the backbone of the police machinery of India. The headman occupied the

position of a police magistrate, and the watchman worked under his orders. In Northern India the village system was less complete. There was no headman, and though every village had its watchman, he was the servant of the landowners rather than of the community, and the landowners were held responsible for losses occasioned by crime committed on their land. The Mughals made no change in the system of village police, but the duty of supervising them was entrusted to the revenue officers, who were also magistrates. With the decline of the Mughal power the system fell into great disorder, and the petty chiefs and zamindars used their adherents to ravage and plunder the lands of their neighbours. This evil example was followed by the village headmen and the village police.

Detective work. The Code of Criminal Procedure divides offences into 'cognizable' and 'non-cognizable', according as the culprit may or may not be arrested without a warrant. The police are mainly concerned with cases of cognizable crime. The following is an example of the ordinary procedure on the occurrence of a case of serious cognizable crime, such as burglary. Information having been brought to the police station by the village watchman, accompanied very likely by the complainant, the statements are reduced to writing and the officer in charge of the station proceeds to the locality to take up the investigation. Every stage in the proceeding, and its result, is recorded in a diary, in which are also set down the statements of the persons examined. These may not, however, ordinarily be used as evidence. If necessary, the investigating officer may search any house for stolen property or other articles throwing light on the crime. If the accused person confesses his guilt, his statement has to be recorded by a magistrate, who must certify that, to the best of his belief, the confession is voluntary. These precautions are taken to guard against the extortion of confessions by torture or undue influence.

If the investigation results in the detection of the supposed criminal, the police officer arrests him and sends him to the local magistrate, who either remits him to custody or releases him on bail. The police may not detain an accused person for more than twenty-four hours without a magistrate's special orders. When the case is complete, the papers

are sent to the magistrate (very often they accompany the accused), and the prisoner is tried or committed to sessions. If the investigating officer finds no case for trial, he sends up the papers marking the case as true, false owing to mistake of law or fact, or maliciously false, as the case may be. (A 'true' case, under these circumstances, would be one in which the crime was found to have been committed, but there was held to be no adequate evidence implicating any particular person.) The magistrate then orders further proceedings or records the case under one or other of the above heads. In maliciously false cases the complainant may be prosecuted.

Finger-tip impressions. A powerful agency for the detection of habitual offenders has been secured in the system of recording and classifying the finger-tip impressions of persons guilty of grave crime. This system owes its inception to an Indian magistrate (Sir W. Herschell), and its extension to the identification of old offenders was rendered possible by the labours of Mr. Henry, Inspector-General of Police, Bengal, in which Province it was first introduced. The method has been skilfully elaborated and is now used with considerable effect. In Bengal, in 1899, successful search was made in over 45 per cent. of the cases sent for comparison to the central office where the classified records are kept.

Defects and reforms. The existing police organization is a great improvement on the system which it replaced, and it has done much useful work. It is, however, notorious that it has not been in all respects satisfactory. The detective agency has too often proved incompetent, supine, or dishonest, and the old Eastern traditions of extortion and the maltreatment of prisoners have never been entirely eradicated. In 1888-9 the Government of India made a searching inquiry into the working of the police force, and suggested various changes, but on the whole it would seem doubtful whether there has been adequate improvement since the reforms then inaugurated. The Government of India appointed a Commission in 1902 to inquire into the police administration. The report of this Commission embraced a wide field, covering every branch of the subject. In addition to the reforms which have been already referred to, the Government of India has approved of substantial increases in the pay of all grades, besides other

measures to improve the conditions and efficiency of the police.

Jails: progress of reform. The criminal law of the Muhammadans, which prevailed in India prior to British rule, is characterized by the cruel nature of its penalties. During the reign of the humane Akbar the severity of the punishments was modified by instructions drafted by the emperor or his advisers, but the comparative leniency of his criminal system was not maintained under his successors. When the proceedings of the Muhammadan criminal courts came within the sphere of the Company's administration, impalement, mutilation, and flogging were ordinary forms of punishment. In England also of those days the criminal law retained much of its early barbarity. The early Indian jail system was, like its English prototype, insanitary, demoralizing, and non-deterrent. All classes of male criminals were mixed together, and convicts were, in many cases, better clothed and fed, and more lightly worked, than free labourers. Discipline was lax, and the mortality, especially among those who laboured on the roads, was very high. In 1834 a regulation was passed for the improvement of prison discipline, and shortly afterwards the first great measure of prison reform was inaugurated at the instigation of Lord Macaulay. The report of the first Prisons Commission, which was presented to the Government in 1838, recommended a series of radical reforms. In point of fact, much progress had not been made when Sir John Lawrence in 1864 appointed the second Prisons Commission. Their report laid down a well-considered system which in its essential features is still in force. In 1876 Lord Lytton appointed a third Commission, and in the time of Lord Dufferin attention was again directed to the diversity of prison regulations. Two officers of experience were appointed to make an exhaustive inquiry, and their report was submitted in 1889. It was supplemented by a conference of experts, and a general Prisons Act (IX of 1894) was then passed.

Forms of imprisonment and prison labour. The forms of imprisonment authorized by the Indian Penal Code are transportation, penal servitude, rigorous imprisonment (i. e. with labour), and simple imprisonment. There are three classes of labour—hard, medium, and light. The main principle laid down with regard to jail manufactures is that the work must

be penal and industrial; care is taken that the jail shall not compete with local trade. Schooling is confined to juveniles. Female prisoners are exempted from whipping, fetters, and handcuffs. In 1903 there were 1,168 boys in reformatory schools; the control of these schools has been transferred to the Education Department. Port Blair in the Andaman Islands is now the only penal settlement.

LESSON 46. EDUCATION

Early history of education under British rule. In England, during the early days of the Company's rule, the state still left the care of education to private enterprise and 'the pious founder'. The principles which prevailed at home naturally influenced the conduct of the administration in India, and the Court of Directors did little to supplement the indigenous systems of education existing in their territories. Their efforts were confined to the establishment of colleges for Oriental learning, such as the Calcutta Madrasa for Muhammadans founded by Warren Hastings in 1782, and the Benares College for Hindus established in 1791. But the cause of general education was not without its advocates. In 1815 Lord Hastings declared his anxiety to see some system of public instruction established, and the private endeavours of native and English gentlemen and of missionary bodies gave a fresh impetus to educational progress. Potent causes were at work which tended to direct the current of education into new channels. A knowledge of English became a means of livelihood to natives at the centres of government, and a demand arose for English instruction in the Presidency towns. Meanwhile a new influence in favour of popular education was being brought to bear upon the Indian Government by missionary and philanthropic bodies both in this country and in Europe.

Early missionary work. At a very early date Christian missionaries assumed an honourable and important position in the history of Indian education. In the days of Portuguese ascendancy in the South the Jesuit fathers established a fairly wide system of education. When the scale turned in favour of British rule Protestant missionaries were, no less

zealous. The first English missionary college in India owed its foundation to the Baptists. In 1799 Carey and four other missionaries, in order to avoid the opposition of the British authorities, established themselves at Serampore, on the Hooghly, which was at that time a Danish possession. This group of Baptist missionaries rendered themselves illustrious by their literary activity, and in ten years the Bible was translated and printed, in whole or in part, in thirty-one languages. In 1818 they founded the Serampore College. In 1820 a College was founded at Calcutta, with funds subscribed in England in honour of Middleton, the first Anglican bishop in India. Another name celebrated in connexion with the early history of education in India is that of Dr. Duff, missionary of the Church of Scotland. He landed at Calcutta in 1830, and in spite of a host of difficulties succeeded in establishing a seminary for imparting literary, scientific, and religious education through the medium of English. These early missionary efforts had a most important influence in fostering the demand for English education. They taught the natives that English was a profitable acquisition, while the Government learnt the usefulness of English-taught natives in the public service.

Controversy between the Anglicists and the Orientalists. But the claim of an English as opposed to an Oriental education was not established until after a long struggle. Two parties arose, both of which favoured the extension of vernacular education; but while the Orientalists desired that it should be supplemented by the study of the classical languages of the East, the Anglicists contended that the knowledge and science of the Western world should be thrown open to the natives of India through the study of English. The majority of the Company's servants were at first in favour of Oriental education, but the party of change included prominent members of the native community, and in the end the scale was turned against the Orientalists. A minute written in 1835 by Lord Macaulay (at that time Legal Member of Council and a member of the Council of Education) had a great influence in determining the issue. Almost immediately after his minute was written, the Government issued a Resolution which decided unequivocally in favour of a Western education. In reaffirming the decision in 1839, Lord Auck-

land explained that the existing Oriental institutions were to be kept in full efficiency.

Further history up to 1854. It is not possible in a brief sketch to give an adequate account of the tentative efforts made during the next twenty years in accordance with the principles which had now become established. Missionary effort continued to play an important part in educational progress, the interest of enlightened natives was aroused, and the Government accepted an increasing share of work and responsibility. In Bengal, under the general control of a Council of Education, a number of colleges and schools were established for the teaching of the upper and middle classes, but very little was done for the improvement of elementary education. The authorities shrank before the magnitude and difficulty of the task, and declared that education must be left to filter downwards to the great mass of the population. In the North-Western Provinces, which were separated from Bengal in 1836, a different spirit prevailed; and Mr. Thomason, who was Lieutenant-Governor from 1843 to 1853 and was warmly supported by Lord Dalhousie, succeeded in inaugurating a system of general elementary instruction. But progress throughout India up to the year 1853 had not been encouraging. There were only fourteen Government colleges for general education; elementary vernacular education had been attempted with any degree of success only in the North-Western Provinces and Bombay; and the total number of pupils in Government colleges and schools of all classes in Madras, Bombay, Bengal, and the North-Western Provinces amounted to less than 40,000.

The dispatch of 1854. Such was the position of affairs when, in 1854, Sir C. Wood (afterwards Lord Halifax) being President of the Board of Control, the Court of Directors decided that the Government should afford assistance 'to the more extended and systematic promotion of general education in India', and addressed the Governor-General-in-Council in a memorable dispatch which sketched in outline a complete system of public education, controlled and aided, and in part directly managed, by the state. The principles then laid down were reaffirmed in 1859 after the transfer of the administration to the Crown, and still guide, in the main, the efforts of the Government for the better education of the people.

Later history. 1854-71. In spite of the dark days which followed close on the dispatch of 1854, the Government of India at once took vigorous action, and a great impetus was given to all forms of educational activity. The Universities of Calcutta, Madras, and Bombay were founded in 1857, and by 1861 the new system was in general working order. In that year the number of pupils in public institutions in the Provinces of Madras, Bombay, Bengal (including Assam), and Agra amounted to about 230,000, of whom 200,000 were in the primary stage. During the next few years the progress of primary education, though considerable, did not keep pace with the extension of education of a higher class. In 1871 there were in all British India about 518,000 pupils in primary schools, while the pupils in secondary schools numbered 206,000.

1871-1902. Between 1871 and 1882 a remarkable development took place. In the latter year more than $2\frac{1}{2}$ million pupils were receiving instruction in 90,000 public institutions. The progress since 1881-2 has been considerable; but the rate of development in primary education which occurred in the preceding decade has not been maintained, while during the past few years the work has been greatly hindered by plague and famine. At the end of the year 1901-2 nearly 4,000,000 students were under instruction in about 105,000 public institutions of all grades, and more than 600,000 pupils were being taught in about 43,000 private institutions. Notwithstanding the great increase recorded in the number of scholars, the Census of 1901 showed that in all India the proportion of persons able to read and write to the total population was still only 98 per 1,000 in the case of males and 7 per 1,000 in the case of females.

Literacy. It is worthy of note that in the north-west of India, where the Aryan element in the population is believed to be strongest, the people are far more ignorant than in the east and south, where the Mongolian and Dravidian races predominate. As regards religions, the order of literacy is as follows:—Pārsīs, Jains, Buddhists, Christians, Sikhs, Hindus, Muhammadans, Animists. The Census shows 68 males and 7 females in every 10,000 of the population as literate in English. Here Bombay, Madras, and Bengal hold the first place among the larger political units. There are

also, and especially in Madras, a good many people who can speak English but cannot write it.

Rural schools. The rural schools present a problem the magnitude and the difficulty of which are exceeded only by its importance. The mass of the peasantry are still utterly illiterate. In Upper India one frequently comes across villages with only one or two men who can sign their names; in Bengal and in Southern and Western India matters are better, but everywhere ignorance is a prominent characteristic of the cultivating class. The Government has not failed to perceive the extreme importance of the problem, and ever since the days of Mr. Thomason it has been the subject of repeated investigation and experiment. During recent years considerable improvements have been made in the character of the village schools, and the subjects and methods of instruction have been brought into greater harmony with the conditions and requirements of peasant life. The subject has received special attention in Bombay, the Central Provinces, and the Punjab.

Female education. Female education in India has to encounter peculiar difficulties. The demand for school instruction for girls is of recent origin, and social customs in regard to child-marriage and the seclusion of women of the well-to-do classes hinder its growth. The Government did not take up the subject till 1849, when Lord Dalhousie informed the Bengal Council of Education that henceforth its functions were to embrace female education, and the first girls' school recognized by Government was founded shortly afterwards by a committee of native gentlemen. The dispatch of 1854 directed that female education should receive the frank and cordial support of Government, as by this means a far greater proportional impulse is imparted to the educational and moral tone of the people than by the education of men. The Education Commission of 1882 advised that female education should receive special encouragement and be treated with special liberality. The Government accepted this view; and state funds are more freely used, and state management more largely resorted to, for this object than is considered desirable in the case of the education of boys. The percentage of girls in public institutions to girls of school-going age was 1.6 in 1886-7, 2.1 in 1896-7, and

2.2 in 1901-2. At the end of that year there were about 393,000 female pupils in public institutions, of whom nearly one-half were in mixed boys' and girls' schools. Much assistance has been given to the cause of female education by mission schools and mission classes for home teaching.

LESSON 47

MEDICAL ADMINISTRATION, HOSPITALS, AND SANITATION

Ancient Indian medicine. The subject of Hindu medicine is one of special interest, inasmuch as it had considerable influence on the development of medicine in Europe. The works of Charaka and Susruta, the two greatest Sanskrit medical authorities, were rendered into Arabic at the close of the eighth century A.D., and are quoted as authorities by the celebrated Arabic physician Ar-Razi, who died in 932. Arabic medicine in its turn became, down to the seventeenth century, the chief authority for European physicians, and Charaka is frequently mentioned in Latin translations of Arabic writers. The national medicine of India derived its first impulse from the exigencies of the national worship, for anatomical knowledge had its origin in the dissection of the victim at the sacrifice, with a view to dedicating the different parts to the proper gods. The ancient medical science was ascribed to the gods and known by the collective title of Ayur Veda. The best era of Indian medicine was contemporary with the ascendancy of Buddhism (250 B.C. to A.D. 750), and the public hospitals which the Buddhist princes established in every city were the great schools of Indian medicine. The works of Charaka and Susruta belong to this period.

The Hindu medical system, though not devoid of errors and absurdities, shows, at its best, a surprising degree of progress in all branches of the science. The *materia medica* of the early Hindus embraced a vast collection of drugs, indicating a great knowledge of herbs and considerable medical skill. They were acquainted with, and understood the preparation of, a wide range of chemical compounds, and were the first to prescribe the internal use of metallic sub-

stances. Their pharmacy contained ingenious processes of preparations, with elaborate directions for the administration and classification of medicines. Their practice of physic embraced the classification, causes, symptoms, and treatment of diseases. The maladies thus dealt with were arranged in ten classes: namely, those affecting (1) the humours; (2) the general system, including fevers; (3 to 9) the several organs and parts of the body; and (10) trivial complaints. The surgery of the ancient Indian doctors appears to have been bold and skilful. They performed amputations and a number of other difficult operations, and were expert in midwifery. Students were trained to operate on wax spread out on a board, or on the tissues and cells of the vegetable kingdom, and upon dead animals.

As Buddhism passed into modern Hinduism, the hospitals disappeared; and the Brāhmans, scrupulously avoiding contact with blood or morbid matter, withdrew from the medical profession and left it in the hands of the Vaidyas, a lower caste. They, in turn, abandoned medical practice; and thus the decline of Hindu medicine went on until it sank into the hands of the village *kābirāj*, whose knowledge consists of jumbled fragments of the Sanskrit texts and a by-no-means contemptible pharmacopoeia, supplemented by spells and fasts. Meanwhile the Muhammadan conquests brought in a new school of foreign physicians, who derived their knowledge partly from Arabic translations of the Sanskrit medical works of the best period, though more largely from the Greek authors (Hippocrates, Galen, &c.), whose works had likewise been translated into Arabic. The Musalmān doctors or *hakims* monopolized the patronage of the Muhammadan princes and nobles of India.

Duties of the Medical and Sanitary department. The work of the Medical and Sanitary department in British India includes a number of important branches of the public service. Hospitals, dispensaries, and lunatic asylums; vital statistics; general sanitation and vaccination; the health of ports and shipping; medico-legal, bacteriological, and other scientific and miscellaneous matters fall within its scope.

Hospitals, dispensaries, and asylums. In 1902 British India contained, outside the Presidency towns, about 2,400 public hospitals and dispensaries under Government control.

nearly 500 independent private institutions, and more than 500 special institutions in connexion with police, railways, &c. Omitting institutions maintained for special purposes, the total number of dispensaries amounted on an average to one in about 330 square miles of country. The total of the returns for all classes of dispensaries shows that about 26½ million persons obtained medical relief in 1902. But this figure does not imply so many separate individuals, for one person may obtain relief several times in the course of the year. In the Indian Census of 1901 only 66,000 persons were returned as insane in a population of 294 millions. This is less than one-fourteenth of the proportion of insanes in England. All lunatic asylums are under Government management. Asylums are also maintained in a number of places for the segregation and treatment of lepers.

Rural sanitation. Only one-fourteenth of the population of British India live within municipal limits, and the problem of rural sanitation involves, therefore, the health of the great bulk of the inhabitants. Great improvements have been effected in many places; but the village house is still often ill-ventilated and over-populated; the village site dirty, crowded with cattle, choked with rank vegetation, and poisoned by stagnant pools; and the village tanks polluted, and used indiscriminately for bathing, cooking, and drinking. That the way to improvement lies through the education of the people has always been recognized. One of the first acts of the Sanitary department was the issue of simple rules for village sanitation, which were translated into the vernacular and explained to the villagers by the District officer; and similar efforts continue to be made. The rudiments of hygiene form a portion of the course of primary education, and the improved methods of modern elementary instruction are used to make the lesson interesting and impressive. These efforts must in time prove effective: encouraging results have been obtained in municipalities, and the knowledge which grows up in the towns spreads to the country. At the present time Madras may be considered the foremost Province in the matter of rural sanitation.

Progress in towns. On the whole the inhabitants of towns have advanced much more rapidly than the rural population in the appreciation of healthy conditions of life, and

contrasting the state of affairs forty years ago with what it is now there is good ground for satisfaction. Much, however, remains to be done, not only in the prosecution of large works (water-supply, drainage, sewage, &c.), but also in the improvement of general sanitary conditions. Lack of funds is often a great obstacle to progress. The income of many municipalities is very small, and cannot be greatly enhanced without a burden of taxation which would be felt as oppressive. The outbreak of plague has drawn prominent attention to existing defects, and thus helped towards their removal.

Epidemic disease. To deal with outbreaks of epidemic disease is an important part of the work of the Medical and Sanitary department. On the occurrence of a serious outbreak of cholera, small-pox, or epidemic fever, special officers are sent to the locality to tend the sick, to supervise such precautions as experience has shown to be most effectual, and to investigate the cause and history of the epidemic. The enormous religious assemblages which take place periodically in many places throughout India are sometimes sources of epidemic disease, and careful sanitary arrangements are made to lessen this danger.

Plague. During the last few years India has suffered from a widespread epidemic of plague. The first trustworthy information of the occurrence of plague in India dates from the year 1812, when an epidemic broke out in Cutch, spread into Gujarāt and Sind, and did not die out until after the lapse of ten years. In 1828-9 a disease showing all the symptoms of plague is reported to have been prevalent at Hānsi, in the Hissār district of the Punjab. In 1836 another epidemic occurred at Pāli in the Mārwar State of Rājputāna, and spread over a considerable area, causing great loss of life. The present epidemic broke out in the city of Bombay during the autumn of 1896.

LESSON 48. SURVEYS

Difficulties. The Kashmīr survey affords a good illustration of work carried on at high altitudes. It was entrusted to a young officer, Lieutenant T. Montgomerie, R.E., who, in 1855, with two assistants, commenced the main triangulation from the edge of the hills near Siālkot, observing with a

14-inch theodolite. From the outset the greatest physical difficulties were encountered; some of the first stations on the Pir Punjāb were at an elevation of 13,000 to 15,000 feet, and this altitude increased as the work progressed northward. During one season the average height of the stations exceeded 17,000 feet; and it was frequently necessary for the observers to remain for days together at these great altitudes, waiting for the cessation of violent snow-storms or the clearing away of fog and mist, while all supplies and fuel had to be brought up from far below. In five years the triangulation had been extended over 93,000 square miles and the map of the Kashmīr valley completed. The greatest height at which the theodolite was set up was 20,866 feet; though a mark was erected on, and luminous signals read from, a point at 21,480 feet, while the highest point fixed by the triangulation was K₂ (Mount Godwin Austen), 28,290 feet above sea-level. The plane-table just reached the height of 22,000 feet, and the native *khalāsi* who carried the instrument must have ascended to that altitude with a load of 18 lb. on his back. The survey was completed in 1864, by which time the triangulation had covered an area of over 110,000 square miles, and the detail survey about 92,000 square miles, of the highest, most rugged, and most desolate mountains on the face of the globe. The work had been extended over the Karakoram range to lat. 37° N. and included the Pangong Lake and the Changchenmo Valley. It is noteworthy that this survey was carried on, without cessation, during the troubled period of the Mutiny.

Mention may be made of another topographical survey, in progress from 1853 until 1877, which for nearly twenty years was superintended by a single man—Colonel Saxton. The scene of his labours lay in the deadly jungle-covered tracts from Chotā Nāgpur to the Godāvāri, and embraces the Ganjām and Vizagapatam Agencies, and a portion of the Central Provinces with Bastar, Jeypore, and their dependencies, an area of over 70,000 square miles. The history of this survey is one continuous tale of sickness and death due to fever, and of active opposition to its progress by the wild tribes who inhabit that area. Of the many persons employed on it Colonel Saxton alone appears to have passed, though not unscathed, through the long ordeal.

These two topographical surveys may, however, be con-

sidered as extreme examples of the difficulties which attend the surveyor's life. Between them lie many a pleasant record and experience of work performed under ideal conditions of country, climate, and scenery. Such are the surveys in Bombay, Rājputāna, Mālwa, and Central India, and among the outer Himālayas. The life of a surveyor, though solitary, affords, in its intervals of leisure, varied opportunities to the artist, the archaeologist, and the sportsman, and leads him into tracts of country rarely visited by Europeans.

Progress. During the last thirty years topographical surveys have been pushed on throughout India, more especially in Burma; and now, with the exception of portions of the latter Province and certain tracts in Madras, there is hardly any part of the Indian Empire which has not been topographically mapped. Unfortunately no provision was made for keeping the older maps up to date, and in consequence there are very considerable areas in which these have become practically obsolete. In 1904 a Committee was appointed to report on the state of the maps in each Province, and the measures required to bring them up to date. This Committee reported in 1905, and recommended the preparation of a modern map of India on the scale of 1 inch to the mile and of a general map on the international scale of 1 : 1,000,000.

Marine Surveys. The survey of Indian waters commenced, with coast charts, in the early days of the East Indian Company. When the Indian Navy was abolished in 1862, the whole seaboard of India, and the adjoining waters from the Red Sea and the Persian Gulf to the Straits of Malacca, had for the most part been surveyed as far as was practicable with the imperfect appliances available. The Government of India established a special Marine Survey in 1874. In 1881 the department was reorganized, under a Commander from the Royal Navy, with a staff of four naval and eight Indian Marine officers. Since 1881 this staff has been slightly reduced, and all its members except the officer in command are now drawn from the Indian Marine, to which the Marine Survey is administratively attached. The sphere of the Marine Survey extends from Baluchistān to Siam, but its services have on more than one occasion been utilized outside these limits. The object of marine surveying is to provide charts for the purposes of navigation.

LESSON 49. CURRENCY AND BANKING

The fall in the value of silver. Under the Coinage Acts of 1835 and 1870 silver was received without limit when tendered for coinage at the mints of Calcutta and Bombay, and the gold value of the rupee consequently depended on the gold price of silver bullion. The decline in the value of silver as compared with that of gold, which began about the year 1873, occasioned a heavy fall in the rate of exchange as between India and gold-standard countries. The great loss which the Government of India suffered in making remittances to meet its sterling obligations in England rendered necessary a considerable increase of taxation. But this was by no means the only injury which India experienced from the fall in exchange. The whole economic relations between India and England were disturbed, and at last it was recognized that the adoption of a gold standard was the only way to avert disaster.

Closure of the mints. In 1893 the Indian mints were closed to the unrestricted coinage of silver; at the same time it was declared that gold coin and bullion would be received at the mints in exchange for rupees at the rate of 1s. 4d. to the rupee, and that the sovereign and half-sovereign would be similarly received in payment of sums due to Government. After a considerable period of difficulty and anxiety this policy achieved its object, and in 1893-9 the average rate of exchange was only 0·02d. less than the 1s. 4d. rate.

Introduction of a gold standard. It was now determined to take the further steps necessary for acquiring a gold standard. In September, 1899, sovereigns and half-sovereigns were made legal tender at the rate of 1s. 4d. to the rupee, and a debtor could henceforward meet his obligation in whichever currency he preferred. The rupee, while still legal tender for any sum, now became a token coin representing one-fifteenth of a sovereign, though as yet no sovereigns have been coined in India. The bulk of the metallic currency thus consists of coins which pass without limit at a tender value far greater than their intrinsic worth. The Government did not accept any legal obligation to give gold for rupees, but its policy is to make rupees and sovereigns as far as possible

convertible. Gold is freely given on demand, as far as possible. It is of great importance that the Government should be prepared to satisfy at any time a considerable gold demand. A special Gold Reserve Fund has therefore been established, on which the Government can draw should the stock of gold in the paper currency reserve become exhausted. At the end of 1903-4 the Gold Reserve Fund amounted to about 6½ millions sterling, while more than 10 millions sterling was held in gold in the currency reserve.

The paper currency. Under Acts of 1839, 1840, and 1843, the Presidency banks of Bengal, Bombay, and Madras were authorized to issue notes payable on demand, but the circulation of the notes was practically limited to the three Presidency towns. These Acts were repealed by an Act of 1861, which provided for the issue of a paper currency through a Government department by means of notes of the Government of India payable to bearer on demand. Since then no banks have been allowed to issue notes in India. Calcutta, Madras, Bombay, and Rangoon, are the head offices of issue. Every office of issue is the centre of a circle within the limits of which its notes are legal tender. Notes of higher value than Rs. 5 are payable only at the office of issue, save that the notes of subordinate offices have hitherto been payable also at the corresponding head office. Beyond this the law imposes no obligation to pay; but, for the accommodation of the public, notes of other circles are cashed at any paper currency office to such extent as the convenience of each office will permit. Measures have been taken to make Rs. 5 notes cashable as of right at any Government treasury in India proper. The gold and silver received for currency notes is retained and secured as a reserve for payment of notes issued, with the exception of a fixed sum which is invested in Government securities as representing a safe proportion of the notes likely to be presented for encashment. This sum has been raised from time to time with the increase of the note circulation, and the fixed sum invested is now 12 crores.

Native money-lenders. The industry of India is financed by two classes of institutions, the native money-lenders and the banking concerns which have been established on European models. The indigenous agency varies from the wealthy banker of the large town to the petty village *mahājān* who

advances small sums of money or small quantities of grain to the ryots of the neighbourhood. Although the majority of these money-lenders have only a local business, the aggregate of their transactions amounts to an enormous sum. In former days, native bankers, or shroffs, conducted large transactions at the chief commercial centres and at the courts of native rulers, to whom they sometimes acted in the capacity of finance ministers. Even in times of trouble and anarchy, their persons were usually respected. Their credit stood so high that their bills of exchange, or *hundis*, were readily negotiable throughout the country, and often beyond the boundaries of India. The utility of these *hundis* as a medium of remittance has now been largely superseded by the growing use of Government currency notes.

The village *mahājan* has the great advantage of an intimate knowledge of the affairs of his constituents. He charges a very high, and sometimes an exorbitant rate of interest; but it must be remembered that, owing to the impecuniosity of his clients, the risk of non-payment is often great. The work of these local money-lenders has its beneficial and its evil aspect. The system is well adapted to bring capital to the land in the minute doses which the agricultural condition of India demands; on the other hand, the high rate of interest presses heavily on the debtor, while ready access to the money-lender is a temptation to extravagance. In some parts of India agricultural indebtedness has grown to be a great evil, which has forced the Government to have recourse to special legislation.

European banking institutions. The banking establishments constituted on a European model are concerned with the larger operations of commerce, and one of their most important functions is to finance the export trade. At the head of the banking institutions are the Presidency banks of Calcutta, Madras, and Bombay, and then come the exchange banks and other joint-stock banks. As a matter of fact, the great banker of the country is the Government itself, since it holds the greater part of its own cash balances, has the sole control of the paper currency, and controls exchange by its transactions with the Secretary of State.

NOTES

LESSON 1. PHYSICAL ASPECTS.

Rock of Trichinopoly. This rock stands within the fort, rising sheer from the plain to a height of 273 feet above the level of the streets at its foot.

Chāmundi. The name of Mysore is derived from *mahisha*. Sanskrit for 'buffalo', and commemorates the destruction of Mahishāsura, a minotaur or buffalo-headed monster, by Chāmundi or Mahishāsura Mardani, the form under which the consort of Siva is worshipped as the tutelary goddess of the ruling family.

Madan Mahal: an ancient keep constructed by Madan Singh about A. D. 1100.

LESSON 2. GEOLOGY.

Orographical: connected with the physical character, features, and relative position of mountains.

Nummulites: see note. Lesson 12

London Clay: an important geological formation belonging to the lower division of the Eocene Tertiary deposits, in the south-east of England.

Karewas: fan-like alluvial deposits with flat arid tops and bare of trees, running out into the valley of Kashmīr. They are really the shores of a former inland sea. There are similar formations in Nepāl.

Teris: wind-blown deposits of sand in Southern India.

Dāman: the skirt of a hill range (Pers. *dāman*, a skirt).

Regar: a black soil in Central and Southern India, which is very retentive of moisture, and suitable for growing cotton (see p. 169).

LESSON 3. METEOROLOGY.

Par excellence: above all.

Meteorological Department. The work of this department falls into two parts, the directly useful and the purely scientific. The scientific work includes the examination of the physical processes, on the earth or in the sun, which determine the weather. The practical work consists chiefly in the collection and distribution of current weather information. The area under observation embraces not only India but also the whole of the Arabian Sea and Indian Ocean, the Persian Gulf, Persia, Arabia, Chinese Turkestan, and Tibet. In 1909-10 there were 277 observation stations. Daily, weekly, and monthly weather reports, as well as seasonal forecasts and storm warnings, are issued. Storm warnings are sent to seaports and flood warnings to canal, railway, and other officers and to private firms.

LESSON 4. BOTANY.

Endemic: peculiar to the country.

LESSON 5. ZOOLOGY.

Pangolins : a genus of edentate or toothless mammals ; the Malay name *peng-goling*, roller, refers to their power of rolling themselves up.

Passeres : perching birds.

Fluviatile : belonging to rivers.

LESSON 6. ETHNOLOGY AND CASTE.

Endogamous : marrying only within the tribe.

Exogamous : taking a wife outside the clan or group.

Agnatic : related on the father's side.

Vasco da Gama : a Portuguese navigator (1469-1525). He reached Calicut in 1498.

Soi-disant : self-styled, would-be.

Zāt : tribe, caste, kind.

LESSON 8. RELIGIONS.

Soma : see note, Lesson 16.

Prajapati : 'lord of creatures', creator.

Visvakarman : 'omnificent'.

Pāndavas : the descendants of Pandu, brother of Dhritarāshtra, king of Hastināpura.

The five *ka*. 'They must always wear the following articles whose names begin with a K, namely *kes*, long hair ; *kangha*, a comb, *kripan*, a sword ; *kachh*, short drawers ; *kara*, a steel bracelet' (*The Sikh Religion*, by M. Macauliffe). The term 'khalsa', applied to the Sikhs, came from the Arabic *khalis*, pure, and denoted those who accepted the baptism of the sword (*pahul*).

Jesuit Mission : see note, Lesson 46.

LESSON 9. POPULATION.

Population : The figures of the census of 1911 show a total population of 315,132,537 (males 161,326,110 ; females 153,806,427).

LESSON 10. PUBLIC HEALTH.

Sequelae : results, after-effects.

Mortality : In 1908 the ratio of deaths per thousand was about 39 amongst Hindus, 37½ amongst Muhammadans, and 23¼ amongst Christians.

LESSON 11. EPIGRAPHY.

Purānas : see note, Lesson 14.

Rājataranginī : a Chronicle of the Kings of Kashmīr. It has been translated and edited by Dr. M. A. Stein, the explorer of ancient Khotan.

Kharoshthī : 'a modified form of an ancient Aramaic alphabet, written from right to left, introduced into the Punjab during the period of Persian domination in the fifth and fourth centuries B. C.' (*The Early History of India*, by Vincent A. Smith, p. 154).

LESSON 12. PREHISTORIC ANTIQUITIES.

Laterite : a vesicular material formed of disintegrated rock, used for buildings and making roads; also probably valuable for the production of aluminium.

Nummulitic : containing nummulites, a genus of small fossil animals with shells; the name is given to them from their resemblance to coins (Latin *nummus*, a small coin).

Quintus Curtius : a Roman historian who about A. D. 41-54 wrote of the exploits of Alexander the Great.

LESSON 13. ARCHAEOLOGY OF THE HISTORICAL PERIOD.

Stūpa : a Buddhist tumulus or sacred cupola, usually of brick or stone, and more or less hemispherical, containing relics. The form 'tope' is also in use.

Kushān Period : the kings were Kadphises I, Kadphises II, Kanishka, Huvishka, and Vasudeva.

LESSON 14. NUMISMATICS.

'Punch-marked' : not struck with a die, but marked irregularly by small punches of various patterns applied at different times.

purāna : lit. 'old', Hindi; applied to (1) certain Hindu religious books; (2) a geological 'group'; (3) 'punch-marked' coins.

LESSON 15. INDIAN ARCHITECTURE.

Megasthenes : a Greek ambassador at the court of Chandia Gupta (306-298 B. C.).

Chaityas : ancient Buddhist chapels.

Mandapa : a porch or pillared hall, especially of a temple.

LESSON 16. SANSKRIT LITERATURE.

Albērūnī : a learned Muhammadan mathematician and astronomer who wrote 'An Enquiry into India' (*Tahkik-i-Hind*), completed in A. D. 1030.

Salian hymns : pertaining to the Salii or priests of Mars in ancient Rome.

Varro : 'the most learned of the Romans', 116-28 B. C.

The four Vedas (see Lesson 8) : (1) the Rīgveda, 'the Veda of verses,' the oldest and most important; (2) the Sāmaveda, the book of words employed at the sacrifices or offerings of the Soma; (3) the Yajurveda, compiled for the whole sacrificial ceremonial; and (4) the Atharvaveda, a heterogeneous collection of spells.

Soma : the moon-plant (*Sarcostemma viminale* or *Asclepias acida* of botanists), the worship of which is based on its exhilarating qualities. Hence it is called *amṛita*, the 'immortal' draught.

Sloka : a stanza.

LESSON 17. EARLY NORTHERN INDIA.

Euboic talents. 'The Euboic talent weighed 57·6 lb. avoirdupois; 360 talents = 20,736 lb., which, assuming silver to be worth five shillings (quarter of a sovereign) an ounce, or £4 per lb., and the ratio of silver to gold to be as 13 to 1, would be worth £1,078,272' (*The Early History of India*, by Vincent A. Smith, 2nd ed., p. 35).

Gedrosia: now Mukrān or Makrān, a division in Baluchistān.

Khwārizm: see the above-quoted work, p. 208.

LESSON 18. MEDIAEVAL NORTHERN INDIA.

Doāb: the tract between the Ganges and the Jumna (see note, Lesson 29).

Johar: a Hindī term meaning literally 'taking one's life', applied to the desperate resistance offered by high-caste Hindus, principally Rājputs.

LESSON 19. THE HINDU PERIOD OF SOUTHERN INDIA.

Gopuram: a gateway, especially applied to the great temple gateways in Southern India.

Telingāna: in the eighteenth century the term telinga was frequently used in Bengal as synonymous with sepoy, or a native soldier disciplined and clothed after European fashion.

Jātakas: stories of the previous births of Buddha, constituting the oldest, most authentic, and complete collection of folk-lore in the world.

Amphorae: (Greek) a liquid measure containing, among the Greeks, about nine gallons; among the Romans, six gallons seven pints.

LESSON 21. VERNACULAR LITERATURE.

Gestes: exploits, deeds (an obsolete word from Latin *gesta*, actions).

LESSON 22. THE MARĀTHĀS.

Jagīr: an assignment of land, or of the revenue of land; the holder is a jagīrdār.

LESSON 23. AGRICULTURE.

Jowār: the large millet, a very common food-grain, called cholam and jola in Southern India.

Bājra: the bulrush millet.

Ghī: clarified butter.

Takāvi: loans made to agriculturists for seed, bullocks, or agricultural improvements. The total amount of advances is now about £3,000,000.

Co-operative credit societies. In 1905 there were about forty of these societies; in 1909-10 there were over 3,500.

Raiffeisen plan. Friedrich Wilhelm Raiffeisen (1818-88), born at Hamm in Germany, was the founder of agricultural banks on a co-operative principle.

Agricultural development. The greater part of the Government scheme for the development of agricultural experiment and instruction formulated in 1905 has now been realized. There is an Imperial Department of Agriculture, under an Inspector-General and an Assistant Inspector-General, while there are nine provincial Departments. To the Imperial Department is attached the Pusa Central Research Institute and Agricultural College, which has experts in agriculture, botany, mycology, chemistry, and bacteriology, together with a cotton specialist. There have been established in seven provinces an agricultural college and a research station, with laboratories and farms. In Eastern Bengal and Assam there is a special fibre expert. The provincial departments distribute selected seeds and manures, and furnish advice. There is a Board of Agriculture of about forty members.

LESSON 24. FORESTS.

Tidal forests: these occur on alluvial lands subject to overflow of the tide, as in the Sundarbans of Bengal.

Riparian forests: along the banks of rivers, as in the Punjab and in Burma.

Reserved forests. In 1910 the Reserved forests covered 92,000 square miles, and there was scope for further reservation in Madras and Burma. State forests, 157,000 square miles, including 16,000 square miles of Protected forests: total revenue, £1,735,000.

Sissu, &c.: see notes, Lesson 27.

LESSON 25. MINES AND MINERALS.

Imported mineral products. The progress in imports of metals, chiefly iron, steel, and copper, and of machinery and millwork, is evidence of activity in indigenous mining and manufacturing enterprise. Among articles the imports of which point to the growing prosperity of the people may be mentioned silk goods, sugar, mineral oils, hardware and cutlery, provisions, cigarettes, and glass and earthenware. In 1908-9 the value of imported metals was £8,670,000, of railway material £8,000,000, of machinery and millwork £4,500,000, of mineral oils £2,606,000, of hardware and cutlery about £2,000,000, and of salt £561,000.

Abrasive materials: e.g. corundum and millstones.

Refractory materials: e.g. mica, micanite, asbestos, steatite, magnesite.

Chemical industries: e.g. saltpetre, phosphates, potash salts, alum, sulphur, sulphates of iron and copper, borax, soda salts.

LESSON 26. ARTS AND MANUFACTURES.

Gambier: an astringent substance obtained from a Malayan shrub.

Pān: the betel vine, *Piper Bette*.

Aniline and alizarine. Aniline was obtained originally by distilling indigo with caustic potash, but subsequently from many

other sources, especially coal-tar. Alizarine : the red colouring matter of the madder root, but now prepared from anthracene, one of the products of coal-tar distillation.

Myrabolams : the plum-like fruit of species of *Terminalia*, used in tanning.

Pashm : the fine wool of the Tibetan goat.

Cotton mills. In 1910 there were 215 cotton mills at work in India, 83 being in Bombay City and 51 in Ahmadābād ; the number of looms was over 74,000, and of spindles about 6,000,000.

Korah silks : Hind. Korā, 'plain, unbleached, undyed.'

Chādar : a sheet worn as a shawl.

LESSON 27. ARTS AND MANUFACTURES (*continued*).

Shisham : a valuable timber tree, also called Sissū, *Dalbergia Sissoo*.

Padauk : a Burmese timber tree, *Pterocarpus indicus*.

Babūl : a common thorny tree, *Acacia arabica*.

Sola-pith. Sola is a water-plant, *Aeschynomene aspera*.

Nīm : a tree, *Melia Azadirachta*, the berries of which are used in dyeing.

Kaolin : a fine variety of clay, china-clay.

LESSON 28. COMMERCE AND TRADE.

'**Interlopers**.' In the time of the East India Company stringent rules were made against unauthorized and unlicensed traders and settlers : see Ilbert's *Government of India*, chap. i.

LESSON 29. IRRIGATION AND NAVIGATION.

Anicut : in the Madras Presidency, the dam constructed across a river to fill, and regulate the supply of, the channels drawn off from it. The word is said to be from Tamil *andi-kattu*, dam-building.

Bāri Doāb. A doāb is the tract between two rivers. In this case the name was formed by the Mughal emperor Akbar, by combining the first syllables of the two names, Beās and Rāvi ; compare the Rechna Doāb between the Rāvi and the Chenāb, &c.

LESSON 30. RAILWAYS AND ROADS.

Pyingado : a timber tree in Burma, *Xylia dolabriformis*.

Sāl : a useful timber tree in Northern India, *Shorea robusta*.

Pilgrimage. Vessels for the Red Sea pilgrim traffic are cleansed and freed from rats under the direction of the Bombay Port Health Officer. The outgoing pilgrims, numbering 16,097 in 1908-9, are medically inspected, and their clothing and bedding thoroughly disinfected.

Railway traffic. In 1910 there were over 32,000 miles of open railway, which carried more than 384 million passengers and over 71 million tons of goods. The rates charged for passengers are as low as one-fifth of a penny per mile, and under one-halfpenny per ton per mile for goods. The gross earnings in 1910 were about £34,000,000.

LESSON 31. POSTS AND TELEGRAPHS.

Savings banks. In 1910 the deposits amounted to £10,578,119.

Telegraphs. The system now consists of 73,000 miles of line, about 284,000 miles of wire, and 330 miles of cable. Wireless telegraphic communication is maintained between Diamond Island and Port Blair, Diamond Island and Bassein, Calcutta and the Pilot Vessels at the Sandheads, and at Bombay and Jask. There are several radio-telegraph stations in India. A system of direct telegraph working between London and Karachi was established in 1909.

LESSON 33. FAMINE.

Mahuā: a tree, *Bassia latifolia*, producing flowers used (when dried) as food or for distilling liquor, and seeds which furnish oil.

Famine Insurance Grant: the amount set aside in the budget is not less than £1,000,000 annually.

LESSON 34. THE GOVERNMENT OF INDIA.

Charter Acts. The powers and privileges granted by royal charter to the East India Company were confirmed, supplemented, regulated, and curtailed by successive Acts of Parliament, and were finally transferred to the Crown. Charter Acts were passed in 1793, 1813, 1833, and 1853.

Regulation Provinces. This expression is intelligible only by reference to a past state of things. It means practically the presidencies of Madras and Bombay, and the lieutenant-governorships of Bengal and the United Provinces: see Ilbert's *Government of India*, 2nd ed., pp. 102, 135, 273.

LESSON 36. THE NATIVE STATES.

Interpretation Act: see Ilbert's *Government of India*, chap. iii, § 124.

Imperial Cadet Corps: a corps organized by Lord Curzon and consisting of young men of noble birth who have been educated at the Chiefs' Colleges. The object is to give them a military training, so that they may take their places as officers in the Imperial army and with the Imperial Service troops. See *Imp. Gaz. Ind.*, vol. iv, 374.

LESSON 37. FOREIGN RELATIONS.

Sir Stamford Raffles: born 1781, died 1826. In 1811 he accompanied the expedition to Java as Secretary to Lord Minto. In 1818 he became Lieutenant-Governor of Bencoolen and formed a settlement at Singapore.

LESSON 38. LEGISLATION AND JUSTICE.

Lex loci: (Latin) 'the law of the place,' territorial law. See Ilbert's *Government of India*, chap. iv.

Shāstras: the Hindu religious law books.

Declaratory Act. This was based on Warren Hastings's plan of 1772 that 'in all suits regarding marriage, inheritance, and caste, and other religious usages and institutions, the laws of the Korān with respect to Muhammadans, and those of the Shaster with respect to Gentus (Hindus) shall be invariably adhered to'.

Zila: district.

LESSON 39 FINANCE.

Crore: ten millions. In the text the reference is to rupees.

Provincial settlements. The Government of India assigns to the Provincial Governments a fixed share of the revenue collected by them under certain heads. The principal heads of revenue which are wholly Imperial are Opium, Salt, Customs, Post Office, Telegraph, Mint, Exchange, and State Railways; the chief divided heads are Land Revenue, Irrigation, Stamps, Excise, Assessed Taxes, and Forests.

Developing resources. In 1910 there were 275 cotton and jute mills at work in British India, with a capital of £20,322,000; 11,870,000 tons of coal were produced; and the production of crude petroleum rose to the record figure of 234 million gallons. In 1910 there were in operation 2162 joint-stock companies, with a paid-up capital of £40,789,000.

LESSON 40 LAND REVENUE.

'Zamīndāri' and 'Ryotwāri'. 'The distinction has its historic origin in the varying degrees in which, in different parts of the country, tribal occupation of territory has superseded the rights of the ruler, or full proprietary right has been granted to the individual. Under zamīndāri tenure the land is held as independent property. Under ryotwāri tenure, it is held of the Crown in a right of occupancy which is, under British rule, both heritable and transferable. Even in the distinction made in the text there is an element of inconsistency, for as time goes on there is a tendency to treat the many small self-cultivating landlords in the village communities of Northern India more and more individually, after the ryotwāri pattern' (*Imp. Gaz. Ind.* iv. 207).

Cadastral map. Cadastral, relating to the cadastre (Latin *capitulum*, register of the poll-tax, from *caput*, head).

Ain-i-Akbari: the Institutes of Akbar, written by his friend and minister, Abul Fazl.

Sir Thomas Munro: Governor of Madras from 1820 to 1827.

Settlements. In 1910 about 47 per cent. of the total area was held by peasant proprietors, while 20 per cent. was held by permanently settled, and 33 per cent. by temporarily settled, Zamīndāri proprietors.

Incidence of land revenue. The burden of the land revenue per head of the population of British India was under 1s. 7d. in 1908-9. The general increase in land revenue is due to the inclusion of new territory (as Upper Burma); to the bringing of new land under cultivation as in Lower Burma, the Central Provinces, Sind, and the

Punjab; to the inclusion of Berār since 1902; and to the progress of settlements and resettlements. In the five years to 1906-7 the cultivated area in the Punjab increased by $1\frac{1}{2}$ million acres, and the area under canal irrigation rose by over $1\frac{1}{2}$ million acres to $6\frac{1}{4}$ million acres.

LESSON 41. MISCELLANEOUS REVENUE.

Opium. Towards the end of 1906 edicts were issued by the Chinese Government ordering that within ten years the growth and the consumption of opium in China should be suppressed. Proposals were made that the Government of India should co-operate in this object by gradually restricting the amount of opium exported from India to China. By arrangement the quantity exported was to be reduced by 5,100 chests a year. Under the new agreement of 1911 the cessation of the trade will be accelerated.

Salt. In 1907 the salt duty was reduced to one rupee per maund, except in Burma where the rate has remained since 1888 at one rupee per maund on imported salt; in that province locally manufactured salt pays ordinarily a duty of eight annas per maund.

Abkārī: excise of liquors and drugs. For liquors the normal excise system which will eventually prevail over the greater part of British India is based on the grant by contract of the right of wholesale supply and the sale by auction of the right of retail.

Ad valorem: (Latin) according to the value.

Counts. Cotton yarns are said to be of 20's, 30's, &c. counts when the like number of hanks of 840 yards go to the pound avoirdupois.

Income-tax. The receipts, amounting in 1909-10 to over £1,550,000, have risen with the increase in profits and salaries and with improved administration. Only a small fraction of the people (267,619 in 1908-9) contribute, largely in Bombay and Calcutta. All incomes of less than 1,000 rupees (£66 $\frac{2}{3}$) a year, all incomes from land or agriculture, and all military salaries of less than 500 rupees a month are exempt.

LESSON 42. LOCAL AND MUNICIPAL GOVERNMENT.

Port and Harbour Trusts. Port trustees are empowered, subject to the control of the Government, to levy dues on shipping and goods, to charge fees for services rendered, to contract loans for port improvements, to maintain the harbour and its approaches, and to erect warehouses, jetties, harbour lights, and docks.

LESSON 43. PUBLIC WORKS ORGANIZATION.

Lord Napier of Magdāla. Born 1810; died 1890. During the Indian Mutiny he was chief engineer in Sir Colin Campbell's army. In 1870 he became Commander-in-Chief in India and a member of the Indian Council.

Sir William E. Garstin. Born 1849. He entered the Indian Public Works Department in 1872, and became Inspector-General of Irrigation in Egypt in 1892.

Sir William Willcocks: engaged by the Turkish Government to supervise proposed irrigation works in Mesopotamia.

LESSON 44. ARMY.

Rohillas : a name by which Afghāns, or more particularly Afghāns settled in Hindustān, are sometimes known, and which gave a title to Rohilkhand, now a part of the United Provinces. The word appears to be derived from the Pushtu *rohu*, a mountain.

Reorganization. The reform of Army administration which began in 1906, when the Military Department of the Government of India was abolished and its work was divided between the Army and Military Supply Departments (then newly created) and the Finance Department, was completed in 1909 by the abolition of the Military Supply Department. Thus the direction of the whole military administration, under the supreme control of the Viceroy, has passed to the Commander-in-Chief as Member of the Governor-General's Council in charge of the Army Department. The staff is divided into a General and an Administrative Staff.

Indian Marine. In 1909 this consisted of ten sea-going vessels, three inland and harbour vessels, and a number of small steamers, launches, &c.

LESSON 45. POLICE AND JAILS.

Royal Irish Constabulary : a body of armed police maintained in Ireland.

Reformatory schools. There are eight reformatory schools supported by Government ; the only private school recognized under the Act is the David Sassoon Industrial and Reformatory Institution in Bombay.

Port Blair. The convict population of the Andamans at the end of 1908-9 was 13,305, being 930 less than at the end of the previous year ; 437 convicts had been released in commemoration of the fiftieth anniversary of the assumption of the Government of India by the Crown.

LESSON 46. EDUCATION.

Jesuit fathers : a Roman Catholic order called 'the Order of Jesus', founded in 1533.

Carey. William Carey (1761-1834), shoemaker, missionary, and orientalist, was a professor at Fort William College from 1801 to 1830.

Dr. Alexander Duff (1806-78), founded the General Assembly's Institution at Calcutta in 1830. In 1843 he and his colleagues founded the Free Church of Scotland Institution, afterwards called the Duff College. This is now incorporated in the Scottish Churches College, Calcutta.

Literacy. In 1910 there were about 6,250,000 pupils in public and private schools ; from 1902 to 1907 the number of pupils in public schools rose from 3,886,493 to 4,774,480. During these five years the number of Muhammadan pupils increased by 191,896 ; the number of teachers under training rose from 4,600 to 8,225.

Female education. From 1902 to 1907 the number of girls in public schools increased by over 200,000 ; in 1910 there were about

835,000 girls in public and private schools. The cause of the growth is undoubtedly the renewed and increased exertions made by the Education departments and local Governments, aided by a liberal supply of funds.

In 1910 a new Department of Education was constituted, being placed in charge of Education, Archaeology, Census, Gazetteers, Ecclesiastical, Sanitary, and certain other branches of administration.

LESSON 47 MEDICAL ADMINISTRATION, ETC.

Ayur Veda: 'the Veda of Life,' sometimes regarded as a supplement to the Atharva-veda, which deals largely with spells and incantations.

Materia medica: (Latin) the various substances used in making up medicines.

Hospitals, &c. In 1909 the public hospitals and dispensaries numbered 2,652. A satisfactory feature is the increased popularity of the dispensaries among women and children. There are Pasteur Institutes for anti-rabic treatment at Kasauli (Punjab) and Coonoor (Madras). There are many leper asylums, of which may be mentioned the Madras Asylum, the Matunga Leper Home, Bombay, the Trivandrum State Leper Asylum, the Calcutta Leper Asylum, and about fifty asylums of the Mission to Lepers.

Plague. It is now generally agreed: (1) That bubonic plague is spread by infected rats; (2) that the vehicle of contagion between rat and rat and between rat and man is the rat-flea; and (3) that the life of the plague germ in the soil, the floors and walls of houses, and the like, is of short duration. Three principal measures for combating plague are now adopted: (1) the temporary evacuation of quarters in which plague is prevalent, (2) inoculation with the prophylactic fluid; and (3) the systematic destruction of rats, the diminution of their food supply, and the provision of rat-proof houses.

LESSON 48. SURVEYS.

Surveys. The work of the Survey of India Department falls under various heads, namely, the trigonometrical survey, topographical surveys, forest and cadastral surveys, special surveys and explorations, and map production. Maps for the whole of India on the scale of 1 : 1,000,000 have been prepared. A detailed magnetic survey has been taken in hand. A gravimetric survey is maintained.

Marine Surveys. There are two marine survey vessels, thoroughly equipped for modern requirements. Tidal curves are recorded, tide-tables published, harbour approaches and roadsteads surveyed, &c.

LESSON 49. CURRENCY AND BANKING.

Gold Standard Reserve. In 1910 the constitution of this reserve was as follows: Sterling securities, £13,219,217; silver (coined rupees in India), £2,534,302; cash in England, £3,010,528; total, £18,764,047.

Paper Currency. Prior to the passing of the Paper Currency Act

of 1910 the five-rupee note alone was legal tender throughout India and payable at any office of issue in the country; notes of higher value were legal tender only within their own currency circles. The Act of 1910 'universalized' notes of a denominational value of ten and fifty rupees, and thus marks an important stage in the development of the system. There are seven currency circles, having their head-quarters at Calcutta, Cawnpore, Lahore, Bombay, Karachi, Madras, and Rangoon. The value of the notes in circulation is over £36,000,000. It is required that a reserve shall be held against the notes equal to their full value.

Banks. The Presidency Banks are prevented from dealing in foreign exchanges or otherwise employing their capital out of India. They act as bankers for the Government of India, paying and receiving money on its behalf and managing the public debt. In 1906 there were thirty-four joint-stock banks; there are now over four hundred and fifty.

ILLUSTRATIONS.

P. 79. *Lomas Rishi Cave*: see text, p. 110. Every feature and detail of the early caves is copied from a wooden original.

P. 112. *Madura Temple*: see text, p. 112. The glory of the place is the hall of a thousand columns, decorated with sculpture of marvellous elaboration.

P. 114. *Bhuvanesvar*. The largest group of mediaeval temples in Northern India, comprising about 600 separate edifices, ranging in date from the seventh to the twelfth century.

P. 143. *Somnāthpur Temple*: see text, p. 114. This temple was finished in A.D. 1270.

P. 177. *Seated Buddha*. This image belongs to the Gupta period, and was found in recent excavations near Benares.

P. 183. *Bodhisattva Manjūsri*. Tradition asserts that this Buddhist saint with his sword released the waters of a great lake at Kātmāndu, capital of Nepāl.

P. 189. *Kanishka*: one of the Kushān kings, and famous in Buddhist legend as a second Asoka. His capital was Peshāwar, the centre of a school of Indo-Roman Buddhist art.

P. 229. *Mān Singh*: chief of Jodhpur, 1803-43. His brutality and tyranny led to the interference of the British in 1839.

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